

# **The Development of Finnish Syntax between the Ages of 1 Year, 8 Months and 3 Years**

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## ABSTRACT

This thesis investigates the development of Finnish syntax between the ages of one year, eight months and three years from the perspective of generative linguistics. The aim of the thesis is to study language acquisition phenomena that have been studied in other languages but not in Finnish. These phenomena are null subjects, Root Infinitives and the development of the functional projections in child Finnish. This thesis is the first research using generativist framework after Bowerman (1973).

The longitudinal data of the thesis was collected by videotaping two girls' spontaneous speech in their homes once a month in free play situations. The participants of the study were two monolingual Finnish girls between the ages of one year, eight months and three years. On average, one video recording lasted 58 minutes. The data include a total of 32 recordings and 8410 utterances.

In the null subjects, children omit subjects even when they are obligatory in the adult language. Finnish is a partially pro-drop language where subjects are obligatory in the third person. The two Finnish children studied tended to omit subjects in the third person context in the same way as in other languages. Finnish children generally reach adult level at the age of two years, three months.

In Root Infinitives, children use non-finite verb forms in a finite context. The Root Infinitive verb form in Finnish is the third person singular. It is the most frequent verb form in child Finnish, and the children do not use an infinitive verb forms in their early language. Thus, the Finnish Root Infinitive verb form is different from that of other languages, since it is the finite verb form.

The functional projections have been one way to explain why children's language differs from adult language. The children can have all the functional projections from the beginning of language acquisition, or they can develop over it time. In Finnish, functional projections develop gradually. However, Finnish children have one functional projection from the beginning of language two-word stage that can host a tense.

## TIIVISTELMÄ

Väitöskirjani tarkastelee suomen kielen syntaksin kehittymistä kahden ja kolmen ikävuoden välillä generatiivisen kielitieteen näkökulmasta. Generatiivisessa kielenomaksumisen tutkimuksessa on ollut vallalla kolmen toisiinsa liittyvän ilmiön tutkiminen. Ensimmäiseksi, lapset jättävät subjekteja pois puheestaan silloinkin, kun ne pitää fonologisesti ilmaista. Toiseksi, lapset käyttävät finiittisessä kontekstissa jotain muuta kuin finiittistä verbimuotoa. Kolmanneksi on tutkittu funktionaalisten projektoiden, jotka koodaavat tietoa lauseen rakenteesta, kehittymistä.

Tutkimukseni aineisto kerättiin pitkittäistutkimuksella videoimalla kahden tytön spontaania puhetta heidän kodeissaan kerran kuussa leikkitilanteissa. Lapset olivat vuoden ja kahdeksan kuukautta kuvausten alkaessa ja kolmevuotiaita aineiston keräämisen loppuessa. Keskimäärin yksi kuvauskerta kesti 58 minuuttia. Aineisto sisältää 32 kuvauskertaa ja 8410 ilmausta.

Tutkimuksessa selvisi, suomenkieliset lapset jättävät subjekteja pois kolmannessa persoonassa samalla tavalla kuin niissä kielissä, joissa subjektit pitää fonologisesti ilmaista kaikissa persoonissa. Sen sijaan ensimmäisen ja toisen persoonan subjektien kehittyminen on monimutkaisempaa, koska lapsen pitää omaksua kaksi erillistä kielioppia. Suomen kielessä subjektit pitää fonologisesti ilmaista vain kolmannessa persoonassa, mutta puhekielessä niitä käytetään laajasti myös muissa persoonissa.

Tuloksista kävi ilmi, että suomen kielessä lapset käyttävät yksikön kolmannen persoonan verbimuotoa muissakin konteksteissa, erityisesti yksikön ensimmäisessä. Useimmiten nämä ilmaukset esiintyvät ilman subjektia kuten muissakin kielissä. Yleensä tämä verbimuoto on ollut ei-finiittinen, ja useimmiten infiniittinen, joten suomen kielen tulokset eroavat tältä osin muista kielistä.

Tutkimuksen mukaan suomen kielessä lapset käyttävät aikamuotoa syntaksin kehityksen alusta asti, joten heillä on tällöin käytössään yksi funktionaalinen projektio. Muut funktionaaliset projektiot kehittyvät lapsen puheeseen vähitellen suomen kielessä aikamuodon jälkeen. Funktionaalisten kategorioiden kehittymisestä on kaksi eri näkemystä, joissa lapsella joko on kaikki samat funktionaaliset projektiot kuin aikuisilla syntaktisen kehityksen alkaessa tai funktionaaliset projektiot kehittyvät vähitellen lapsen puheeseen. Tällöin lapsella voi olla kielen kehityksen alussa osa funktionaalisista projektioista käytössään tai ne kaikki puuttuvat.

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## **ABBREVIATIONS**

1PL first person plural  
1SG first person singular  
2PL second person plural  
2SG second person singular  
3PL third person plural  
3SG third person singular  
A A-infinitive  
ABL ablative  
ACC accusative  
ADE adessive  
ALL allative  
ARGP agreement phrase  
COND conditional  
CP complementizer phrase  
DP determiner phrase  
ELA elative  
EXPL expletive  
FIN finite  
FINP finite phrase  
GEN genitive  
ILL illative  
IMP imperative  
INE inessive  
INF infinitive  
MA MA-infinitive  
NEG negation  
NEGP negation phrase  
NOM nominative  
NP noun phrase  
O object  
PAR partitive

PASS passive  
PAST past tense  
PL plural  
POT potential  
PP preposition phrase  
PTCP past participle  
PX possessive agreement  
PX/1SG first person singular possessive agreement  
RI the Root Infinitive  
S subject  
SG singular  
T tense  
TP tense phrase  
V verb  
VP verb phrase

# 1 INTRODUCTION

## 1.1 The overview of research questions

This doctoral thesis investigates the development of Finnish syntax in children between the ages of one year, eight months and three years (1;8–3;0). Children's speech differs from adult speech in many aspects. Children's utterances are shorter, and they omit elements that are obligatory in the adult language. The particular interest in this study is in approaches that have been studied earlier in languages other than Finnish. The three major phenomena that have been studied are subject omission in the child language, Root Infinitives and the development of functional categories. All these empirical phenomena are connected to each other since, Root Infinitives occur often without subjects, and the functional categories have been one possibility to explain Root Infinitives. The specific research questions and hypothesis will be discussed in Chapter 5, but here I will present an overview of research topics.

The first phenomenon is missing subjects, a phenomenon that is found in many languages (Hyams 1986; Hyams and Wexler 1993; Hamann and Plunkett 1998; Haegeman 1995). Children omit subjects even when they are obligatory in the adult target language. If a language has a rich verbal inflection system, the subjects may also be dropped in the adult language. In addition, subjects may be omitted when the missing argument can be identified from the discourse (Biberauer et. al 2009). Subject omission by children has been explained with grammatical accounts (Hyams 1986; Hyams and Wexler 1993; Rizzi 1993 and Schütze and Wexler 1996) or with performance accounts (Bloom 1990; Valian 1991). Finnish is a partially pro-drop language, which means that subjects are only obligatory in the third person. Thus, subject omission by children is most clearly established in third person contexts. As expected, Finnish children omit subjects in this context even in situations when the subject would have been obligatory in the adult language.

The second phenomenon is Root Infinitives in the child language, where the child uses non-finite verb forms in a finite context, and these utterances are ungrammatical in the adult language (e.g. Clahsen 1990; Poeppel and Wexler 1993; Rizzi 1993). Root Infinitives have been studied in many Indo-European languages, and they have been

explained with syntactic or semantic analyses. The verb is often infinitive, but other non-finite verb forms can also occur as Root Infinitive (e.g. Varlokosta, Vainikka and Rohrbacher 1998; Salustri and Hyams 2003). Root Infinitives lack a finite marker. The one aim of this thesis is to study which verb form could work as a Root Infinitive form in Finnish child language. In child Finnish, the Root Infinitive has proven to be the third person singular verb form, which is also the default verb form in Finnish. Note that the relevant Root Infinitive construction in Finnish is not modal. Thus, the semantics of Finnish Root Infinitives are not covered by this thesis.

The last phenomenon is the development of functional categories in child Finnish. The functional categories have been seen as one possibility to explain differences between the child and adult languages. In the traditional view, the children have all the same functional categories as the adults from the age of two years onward (Poeppel and Wexler 1993). This approach should explain why the children's language differs from the adults' language. Other researchers claim that the children have some but not all the functional categories (cf. Clahsen 1990). In addition, the children's functional categories may not have all the same properties as those of adults (Schütze and Wexler 1996; Rizzi 1993). Radford (1990) claims that the children lack all the functional categories. Omission of some functional categories in the early child language explains why the children's speech is different from that of adults (Clahsen 1990; Clahsen, Penke, and Parodi 1993). I will propose that Finnish children have one functional projection from the two-word stage, since they demonstrate use of tense. I assume that other functional projections develop gradually in their speech. All research questions and hypotheses are discussed in more detail Chapter 5.

The theoretical framework of syntax adopted for this thesis, is generativist (e.g. Chomsky 1981; Haegeman 1994). Since the children are under three years of age, only basic syntax is needed, and concepts are explained as they emerge. The most important notion is functional category, which is coding the information of the clause type, tense, agreement, and other inflectional morphology.

The standard methods of generative language acquisition research are used, in particular, following Clahsen (1990), who states that children have one functional projection in their early language. In methods, natural spontaneous language acquisition data is collected from two girls, and the syntactic structures are analyzed. In addition, Clahsen (1990) claims that children will acquire the functional projections

step by step. Brown (1973) proposes that children will go through stages in language development, and all the children will acquire structures of a specific language in the same order.

The longitudinal spontaneous speech data used in the thesis was collected from two monolingual Finnish girls between the ages of one year, eight months and three years (1;8–3;0). The girls were videotaped in their homes once a month in free play situations. On an average, each video recording lasted 58 minutes. The data include a total of 32 recordings and 8410 utterances.

The research of Finnish language acquisition has mainly focused on the development of morphology (Toivainen 1980; Laalo 1997; 1998; 1999; 2011; Niemi and Niemi 1985; 1987). Among the studies in acquisition of Finnish syntax come Bowerman's (1973) research on the very early development of Finnish syntax; Lieko's (1992) research on the development of complex sentences in child Finnish; the acquisition of interrogative clauses in Finnish (Kangassalo 1995). In fact, there are no previous studies that focus on the grammatical development of early Finnish syntax, from a generative perspective. Thus, this doctoral thesis is the first comprehensive study on the central topics of null subjects, the Root Infinitive and the development of functional categories in child Finnish.

## **1.2 Outline of the thesis**

As for the organization of the thesis, Chapter 2 provides background information about Finnish syntax and morphology. Only the phenomena relevant to early child Finnish have been presented. Subsequently, Chapter 3 introduces earlier studies in language acquisition from languages other than Finnish, including null subjects, Root Infinitives and the development of the functional categories. Chapter 4 introduces earlier studies in Finnish language acquisition. These include morphological and descriptive syntactic studies. Chapter 5 presents methods of the current study. Chapter 6 gives the data analysis. Chapter 7 discusses implications and further research topics of the thesis.

The following conventions are used to mark the grammaticality judgements of the example utterances in Chapter 2 of Finnish syntax: A star (\*) marks an ungrammatical utterance and a question mark star (?\*) marks a highly deviant utterance. The following

chapters introduce examples from child language and these utterances are not marked ungrammatical or grammatical. Issues are explained in the text when needed.

## 2 FINNISH SYNTAX

### 2.1 Introduction

Finnish is the language spoken by the majority of the population in Finland, and it is an official language of Finland. It has about 5.2 million native speakers. In addition, Finnish has minority language status in Sweden. Finnish belongs to the Uralic language family; specifically, to its Finno-Ugric branch along with Hungarian, Estonian, and Sami.

The basic word order is SVO in Finnish, but it is quite flexible. Finnish has fifteen nominal case suffixes; in addition to nouns, these case suffixes occur on adjectives and numerals. Finnish also has a system of possessive suffixes, with several distinct functions. Finnish has both prepositions and postpositions (a postposition follows its argument). Many of the prepositions in the Indo-European languages are expressed as case suffixes in Finnish. The finite verb in Finnish agrees with its subject in person and number but not in gender (Finnish has no gender marking whatsoever). Standard Finnish is a “partial null subject” language in that first and second person subjects can be omitted; third person subjects can only be dropped under certain circumstances. In spoken Finnish, however, subject personal pronouns are widely used in the adult language, which is the language children are acquiring. Finnish does not have overt grammaticalized articles.<sup>1</sup> In addition to the finite verb forms, Finnish has several non-finite constructions.

In this chapter, I will present Finnish finite clause structure and basic syntax connected to it. First, I will introduce tense projection (TP), sentential negation (NegP) and the finite projection (FinP). After that, I will discuss non-finite clauses in Finnish. Finally, the Finnish CP, which includes *wh*-questions, yes/no questions, discourse particles, complementizers and relative pronouns, will be introduced. In the final two subsections, I will briefly discuss the agreement system, the null subjects, and the case system in Finnish. Only the structures relevant to early children’s Finnish are presented.

---

<sup>1</sup> Some proposals suggest that pronoun *se* ‘it’ is becoming a definite article in spoken Finnish (e.g. Laury 1995; 1996).

Further general information on Finnish syntax can be found (in Finnish): Hakulinen and Karlsson (1979), Vilkkuna (1996), the extensive reference volume Hakulinen et al. (2004), and Brattico (2008). The following publications provide general information on Finnish syntax in English: Vilkkuna (1989); Vainikka (1989); Holmberg and Nikanne (1993); Korhonen (1993); Toivonen (1995); Koskinen (1998); Nelson (1998); Toivonen (2000); Manninen (2003); Nelson and Manninen (2003); Kaiser (2006); Pylkkänen (2008); Kaiser and Trueswell (2011); Biberauer, Holmberg, Roberts, and Sheehan (2009); and Huhmarniemi (2012).

## 2.2 Basic clause structure

### 2.2.1 Tense (TP)

In a sentence, tense locates a situation in time to indicate when the situation takes place. It attaches the time of the event to the time when the clause is stated. It indicates how the verb, which refers to the situation time, relates to the statement period, or to the time of speech. However, in subordinate clauses tense is not deictic, since it does not necessarily connect the situation directly to the time of speech but rather to a main clause. Finnish has four tense forms: present (non-past), imperfect (past tense), perfect and pluperfect (or past perfect) (VISK § 1523). Example (1a) shows the present tense form in Finnish. The marker of the Finnish past tense is *-i* (1b), while the perfect (1c) and pluperfect (1d) use the auxiliary *olla* ‘be’ with the main verb occurring in a past participle form with the suffix *-nut*. Finnish does not have a separate future tense. The present tense is used both for ongoing action and the future.

- (1) a. Pekka            syö        omenan.  
       Pekka.NOM   eat.3SG apple.ACC<sup>2</sup>  
       ‘Pekka (will) eat an apple.’

---

<sup>2</sup> The form of the accusative object changes depending on subject-verb agreement; this will be described later in section 2.6.



- b. Pekka            sö-i            omenan.  
       Pekka.NOM eat.3SG.PAST apple.ACC  
       ‘Pekka ate an apple.’
- c. Pekka            on            syönyt            omenan.  
       Pekka.NOM be.3SG eat.PTCP apple.ACC  
       ‘Pekka has eaten an apple.’
- d. Pekka            oli            syönyt            omenan.  
       Pekka.NOM be.3SG.PAST eat.PTCP apple.ACC  
       ‘Pekka had eaten an apple.’

Third person singular verb form is the most neutral verb form in the Finnish language, and it is used when the subject does not agree with verb (see example (8), below) (Toivainen 1980). Karlsson (1982:208) discusses the child data connection to verb morphology and he assumes that the third person singular verb form as the default verb form in the adult Finnish.<sup>3</sup>

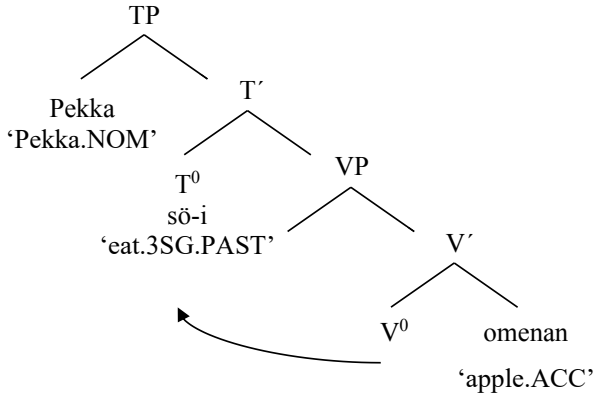
The syntactic tree for example (1b) is provided in (2). As is standard, the main verb and its arguments, including the subject, are base-generated in the VP.<sup>4</sup>

---

<sup>3</sup> For the most part, the third person singular verb form in the present tense ends with a lengthened vowel (*tule-e* ‘come’). Further, in some cases the third person singular present tense verb form does not take any ending (*syö-Ø* ‘eat’). In the past tense, the third person singular verb form does not take endings in any inflecting types (VISK § 107).

<sup>4</sup> According to the so-called little-v hypothesis (Chomsky 1995), a transitive verb moves from V to ‘little’ v to get its ‘transitivity’ or ‘causativity’. In the intransitive clauses the verb stays in the VP. So vP differs in transitive and intransitive clauses. I will not discuss this hypothesis more here, because I have not analyzed it in my data; I will also omit little vP in my structures.

(2)



The tree in (2) shows that the main verb has been raised from V to T, as is assumed in all the generative work on Finnish (e.g. Baker 1985, Holmberg et al. 1993). Verb movement can be evidenced from the position of adverbs which are placed under the verb, or between the verbs if a clause has compound verb forms (Holmberg et al. 1993).

Following Holmberg and Nikanne (2002), I assume that tense projection also hosts modal verbs in Finnish, as can be seen from example (3). Two clearly modal verbs in Finnish are *täytyy* 'must' and *pitää* 'must' with nearly the same meaning and syntactic distribution.<sup>5</sup> In these examples the subject of the clause is in the genitive case, and the modal verb does not take subject agreement marking. Finite verbs only agree with nominative subjects; the modal verbs appear in the non-agreeing third person singular form. The main verb occurs in an infinitive form. Modal verbs show the past-present tense alternation (3c) in all four tenses.

(3) a. Minun täytyy lähteä.

I.GEN must leave.INF

'I must leave.'

b. Pekan täytyy syödä omena.

Pekka.GEN must eat.INF apple.ACC

'Pekka must eat an apple.'

---

<sup>5</sup> These are the only modals that occur in my early child data.

- c. Pekan            täyty-i            syödä            omena.  
          Pekka.GEN   must.PAST   eat.INF        apple.ACC  
          ‘Pekka had to eat an apple.’

According to Holmberg and Nikanne (2002), grammatical mood is represented in the tense projection in Finnish, as well. Only the conditional mood occurs in the early acquisition data; examples of the conditional are provided in (4a-c). Examples of the potential mood are shown in (4d-f).

- (4) a. Pekka            sö-isi            omenan.  
          Pekka.NOM   eat.3SG.COND   apple.ACC  
          ‘Pekka would eat an apple.’  
       b. Minä            sö-isi-n            omenan.  
          I.NOM   eat.1SG.COND   apple.ACC  
          ‘I would eat an apple.’  
       c. Pekka            ol-isi            syönyt            omenan.  
          Pekka.NOM   be.3SG.COND   eat.PTCP   apple.ACC  
          ‘Pekka would have eaten an apple.’  
       d. Pekka            syö-ne-e            omenan.  
          Pekka.NOM   eat.3SG.POT   apple.ACC  
          ‘Pekka may eat an apple.’  
       e. Minä            syö-ne-n            omenan.  
          I.NOM   eat.1SG.POT   apple.ACC  
          ‘I may eat an apple.’  
       f. Pekka            lienee            syönyt            omenan.  
          Pekka.NOM   be.3SG.POT   eat.PTCP   apple.ACC  
          ‘Pekka has probably eaten an apple.’

The conditional mood is used to speak of an event whose realization is dependent upon another condition (often used with the word *jos* ‘if’). The verb carrying the conditional agrees with the nominative subject as shown in the examples in (4). In the perfect tense, the conditional marker attaches to the auxiliary *olla* ‘be’ as in example

(4c). In the potential mood, the auxiliary *olla* ‘be’ has a distinct stem, as in (4f). Presumably due to its low frequency in spoken Finnish, the potential mood is acquired late by Finnish children; as implicitly mentioned above, the potential does not appear in my early data.

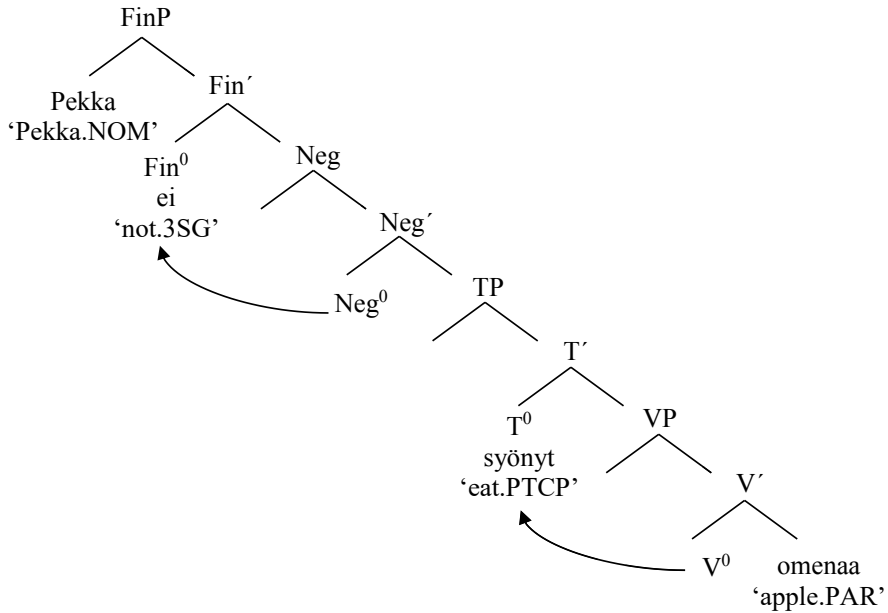
### 2.2.2 Sentential negation (NegP)

Finnish, sentential negation is expressed as a negative verb with the stem *E-*, which only takes agreement suffixes, while tense is expressed in the main verb. Negation immediately follows the subject DP. Examples (5a-d) exhibit the basic properties of sentential negation in Finnish. Tense is expressed in the main verb, as illustrated in example (5c). The direct object case is always the partitive in negative clauses (5) (object cases are dealt with more closely in section 2.6). Furthermore, if the sentence takes negation, it is the first verbal element in the clause that hosts it. Auxiliaries are positioned after negation (5d).

- (5) a. Minä        en                syö    omenaa.  
          I.NOM   not.1SG    eat    apple.PAR  
          ‘I won’t eat an apple.’
- b. Pekka            ei                syö    omenaa.  
          Pekka.NOM   not.3SG    eat    apple.PAR  
          ‘Pekka won’t eat an apple.’
- c. Pekka            ei                syönyt    omenaa.  
          Pekka.NOM   not.3SG    eat.PTCP   apple.PAR  
          ‘Pekka didn’t eat an apple.’
- d. Pekka            ei                ole    syönyt    omenaa.  
          Pekka.NOM   not.3SG    be    eat.PTCP   apple.PAR  
          ‘Pekka hasn’t eaten an apple.’

Syntactically, the sentential negation head and the projected negation phrase (NegP) is located above the TP in Finnish and below the finite projection (see the next section), as shown in analysis (6) for example (5c).

(6)

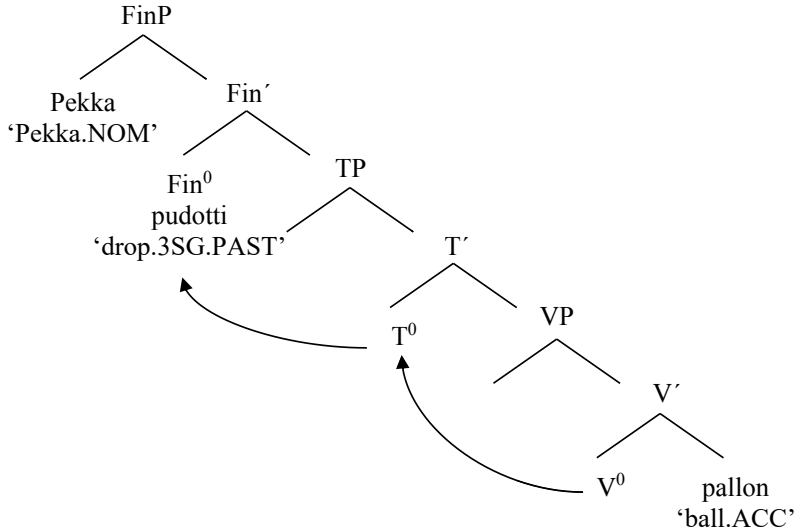


In the tree in (6), the main verb has risen from VP to T, and the negative auxiliary verb has risen from Neg to Fin, following the analysis of Holmberg et al. (1993), and Holmberg and Nikanne (2002). The subject DP *Pekka* ‘Pekka.NOM’ has risen from VP all the way to [Spec,FinP].

### 2.2.3 Finite projection (FinP)

A finite verb constitutes a verb form that can function as a root of an independent clause. In Finnish the finite verb agrees with the nominative subject, which is grammatical subject, in person in person and number. The finite verb shows tense alternation and occurs in a high position in the clause. The tree in example (7) shows the complete structure for an affirmative finite clause ‘Pekka dropped a ball.’.

(7)



In tree (7), the subject *Pekka* ‘Pekka.NOM’ has been moved to the position [Spec,FinP] from [Spec,VP]. The verb *pudotti* ‘drop.3SG.PAST’ is in the past tense and has been moved to Fin<sup>0</sup> from V<sup>0</sup> through T<sup>0</sup> from where it gets its past tense. In (7), the highest verbal element rises to Fin<sup>0</sup> and acquires properties of finiteness from FinP. In a negated sentence, (6), the sentential negation is moved to Fin<sup>0</sup> from NegP.

According to Holmberg et al. (1993), only Fin(ite) and T(ense) are obligatory functional categories in the finite clause of Finnish. They assume that FinP is the locus of subject-verb agreement.<sup>6</sup> Holmberg et al. (1993) argue that finiteness (Fin) is separated from tense and mood on (T), the basis of the observation that agreement and tense/mood can be realized on separate words in a negative clause; that is, agreement is realized on the verb of negation *E-* while tense/mood is realized on the main verb, as is shown above in tree (6).

Holmberg and Nikanne (2002) argue that, in addition to being the usual position for the subject NP, FinP is also the position for topics, i.e., the position can be filled with an agreeing nominative subject or other phrases, such as the object (Holmberg and

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<sup>6</sup> The rationale for using the FinP instead of AgrP lies in the passive clauses, which do not show agreement in Finnish (Holmberg et al. 1993).

Nikanne 2002). Consider examples in (8) (the examples are modified from Holmberg and Nikanne 2002) when the [Spec,FinP] position is filled with a phrase other than an agreeing nominative subject, the grammatical subject stays lower in the tree. Even if the subject is not raised, the finite verb still agrees with the subject.

- (8) a. Greene          kirjoitti          tämän          kirjan.  
 Greene.NOM write.3SG.PAST this.ACC book.ACC  
 ‘Greene wrote this book.’
- b. Tämän          kirjan          kirjoitti          Greene \_\_\_\_.  
 this.ACC book.ACC write.3SG.PAST Greene.NOM \_\_\_\_  
 ‘This book was written by Greene.’
- c. Sitä          leikkii          lapsia          kadulla.  
 EXPL play.3SG children.PAR street.ADE  
 ‘There are children playing in the street.’
- d. Kadulla          leikkii          lapsia.  
 street.ADE play.3SG children.PAR  
 ‘Children are playing in the street.’

In example (8a) the subject is moved to position [Spec,FinP]. The object has been fronted to the [Spec,FinP] position as illustrated by example (8b), while the subject remains lower in the tree, following the main verb. As can be seen from example (8c) the [Spec,FinP] position can be filled with an expletive, while in (8d) the locative phrase has been fronted, and no expletive is realized. According to Holmberg and Nikanne (2002), the subject argument in Finnish moves to the specifier of FinP, and this movement is triggered by the EPP-feature. In Finnish, the EPP can only be satisfied by categories that are referential in a broad sense, including locative and temporal adverbials but excluding sentence adverbials and manner adverbials. In addition, the EPP can be satisfied by an expletive, *se* ‘it’ or *sitä* ‘it.PAR’. In Finnish, the EPP feature

can be eliminated only by a phonologically visible category (Holmberg and Nikanne 2002).<sup>7</sup>

An alternative hypothesis of the same facts suggests that finite projection is missing. Finiteness and its features are inherited from Force to the projection of a lower stage (Neg or TP). According to this analysis, a separate finite head is not needed (Chomsky 2008; Brattico et al. 2014). In this study, I will assume a separate Fin head in Finnish.

#### **2.2.4 Summary of the properties of the Finnish finite clause**

This section outlined the structure of the Finnish finite main clause. The first structure above VP is tense projection (TP). In addition to tense marking, the tense projection carries grammatical mood. The second projection involves sentential negation and its properties in Finnish (NegP). In Finnish, sentential negation is expressed as the verb of negation *E-*, which agrees with the grammatical subject; tense is realized in the main verb in negative sentences. The third projection is FinP, which typically contains a nominative subject and an agreeing finite verb, but a non-subject DP may be fronted to [Spec,FinP] instead of the subject. Thus, the basic affirmative clause in Finnish has two projections above the VP (TP and FinP), and a negative clause has three (TP, NegP, and FinP). After a brief description of non-finite constructions in Finnish, I will describe CP-projection in Finnish.

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<sup>7</sup> Holmberg and Nikanne (2002) assume that all the arguments require an uninterpretable feature [ $\pm$ -Topic], which have to be checked and eliminated before the LF-interface. The EPP-feature can check [ $\pm$ -Topic] feature. Since in Finnish only a phonologically visible category can eliminate the EPP, one [-Topic] element must move overtly to [Spec,FP]. According to Holmberg and Nikanne (2002), this mechanism motivates some or even all syntactic movement. I will turn null subjects in first and second persons in section 2.5.



## 2.3 Non-finites (A and MA)

Finnish has several non-finite (infinitival or participial) constructions. Here I will concentrate on the two that occur in my data namely the A- and MA-infinitivals. The terminology concerning Finnish non-finite structures is somewhat confusing. In this study, the terminology is borrowed from Brattico and Vainikka (2014), where non-finite verb forms are named according to their overt morphology.

Non-finite clauses have thematic subjects which are actors or agents and they occur in the specifier position of VP. According to Koskinen (1998), morphemes of A- and MA-infinitivals share a set of properties that strongly suggest they have a clausal structure based on a verbal head and they assign a full range of object cases and a subject theta role. She argues that the complements of infinite verb forms have the same selectional restriction as those specified by finite verbs. In addition, she claims that all of the non-finite markers affect the temporal interpretation of the clause, which classifies non-finite verbs as part of the temporal system of Finnish, and this implies that their hosts are verbal. In this study, I follow most of Koskinen's analysis of the Finnish non-finite clauses.

### 2.3.1 A-infinitival

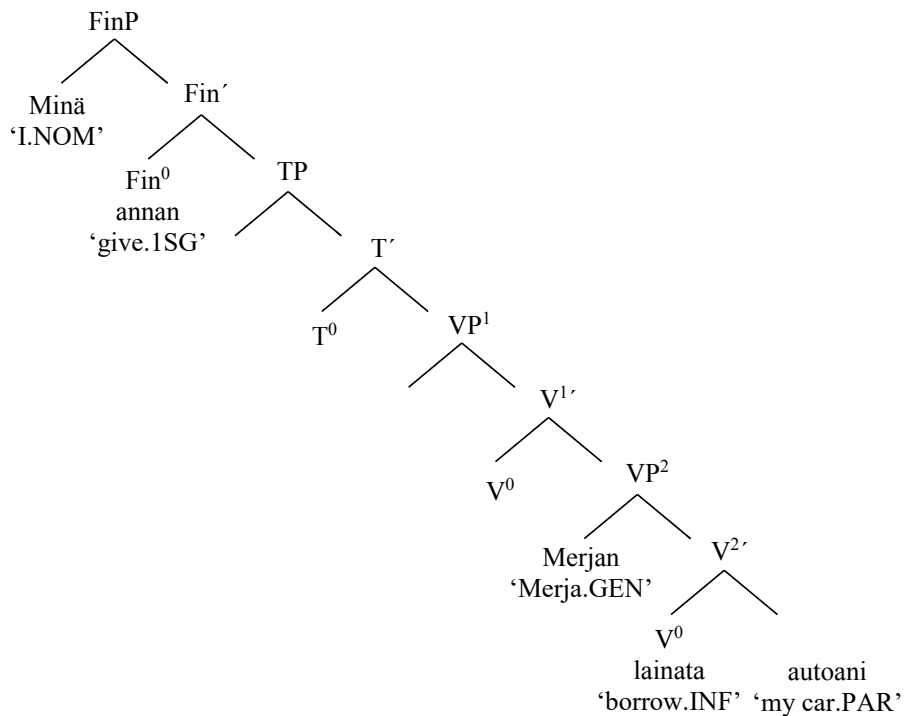
Examples (9) show the Finnish A-infinitive construction, as analyzed in Koskinen (1998, these examples are modified from hers).

- (9) a. minä     annan     [Merjan     lainata     autoani]  
I.NOM give.1SG [Merja.GEN borrow.A my car.PAR]  
'I let Merja to borrow my car.'
- b. minä     haluan     [PRO     syödä     omenan]  
I.NOM want.1SG [PRO eat.A apple.ACC]  
'I want to eat an apple.'

The A-infinitival is not marked for person or number agreement, tense, negation or possessive suffixation. The thematic subject is in the genitive case or, with most verbs,

an overt subject does not occur. Syntactically, the uninflected A-infinitive occurs as a complement of a higher verb. The embedded A-infinitive assigns a thematic role to a subject position, whether this position is realized as a full lexical DP (9a) or as PRO (9b). Koskinen (1998) argues that this DP is syntactically the subject of the embedded clause rather than the object of the control verb, since the main verb cannot assign the genitive case. According to Koskinen, the clause should have a VP-projection that can license the external agent subject. Since there is no evidence for tense, negation or agreement, however, I will assume that these non-finite verb forms are made of VP and not TP, as shown in (10).

(10)



### 2.3.2 MA-infinitival

Example (11) shows the MA-infinitive in Finnish. The MA-infinitive has three inner locative case variants.

- (11) a. Minä näin [Merjan syömässä jäätelöä]  
I.NOM see.3SG.PAST [Merja.ACC eat.MA.INE ice cream.PAR]  
'I saw Merja eating ice cream.'
- b. Minä näin [sinut syömässä jäätelöä]  
I.NOM see.3SG.PAST [you.ACC eat.MA.INE ice cream.PAR]  
'I saw you eating ice cream.'
- c. Minä hain [Merjan syömästä lounasta]  
I.NOM pick.up.1SG.PAST [Merja.ACC eat.MA.ELA lunch.PAR]  
'I picked up Merja from lunch.'
- d. Minä lähetin [Merjan ostamaan ruokaa]  
I.NOM send.1SG.PAST [Merjan.ACC buy.MA.ILL food.PAR]  
'I sent Merja to buy food.'

The thematic subject of the MA-infinitive is in an accusative case, as can be seen from example (11).<sup>8</sup> The MA-infinitival lacks agreement in person/number, tense, and possessive suffixation.<sup>9</sup> The accusative case comes from the main verb *näin* 'saw', since the thematic subject of the MA-infinitival is synonymous with the syntactic object of the main verb (Koskinen 1998). Thus, the thematic subject has an Exceptional Case Marking (accusative). The grammatical subject of the finite sentence is in the nominative in Finnish. Likewise, the accusative is the object case in Finnish (for case markings, see section 2.6). Neither negation nor any other finiteness or tense marking is possible in this construction (Koskinen 1998). These facts suggest that the MA-

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<sup>8</sup> The accusative has two endings; in the singular subjects have *-n* and in the plural *-t*. The singular *-n* form cannot be genitive. Cases are explained more clearly in section 2.6.

<sup>9</sup> Non-finite verb forms in Finnish other than the A- and MA-constructions may carry tense and agreement, realized as a possessive suffix. Tense in these non-finite constructions is probably nominal relative tense, which has different properties than tense in finite verbs.

infinitive only consists of a VP-projection, which makes it similar to the A-infinitive. All the other non-finite constructions in Finnish are presumed to be acquired late, as the children do not produce them in the early data. See Koskinen (1998) for more details on the syntax of Finnish non-finite constructions.

## 2.4 Finnish CP

In section 2.2, we considered the structure for basic finite clauses, involving TP-, NegP-, and FinP-projections. For more complex clauses, such as questions, further structure is required. On top of FinP, one or more CP-level projections need to be posited to account for more complex phenomena. The top-most positions in the clause can also be referred to as the “left edge”. In this section I will present studies on Finnish left edge phenomena.

### 2.4.1 The early CP

Vilkuna (1989) was the first to investigate the left edge phenomena in Finnish in a systematic way. She proposes that the left edge of Finnish sentences has two places that can host constituents she calls them, T (Topic) and K (contrastive focus), which always precedes T, as example (12) shows (the examples are modified from Vilkuna 1989).

- (12) a. (K) (T)
- |           |  |          |  |            |
|-----------|--|----------|--|------------|
| Pekka     |  | pesee    |  | astioita.  |
| Pekka.NOM |  | wash.3SG |  | dishes.PAR |
- ‘Pekka washes the dishes.’
- b. (K) (T)
- |           |  |           |  |           |
|-----------|--|-----------|--|-----------|
| Merjaa    |  | Pekka     |  | rakastaa. |
| Merja.PAR |  | Pekka.NOM |  | love.3SG  |
- ‘It’s Merja that Pekka loves.’

- c. (K) (T)  
 Pekkaa-han Merja rakastaa, ei Jukkaa.  
 Pekka.PAR-*han* Merja.NOM love.3SG not Jukka.PAR  
 ‘It’s Pekka who Merja loves, not Jukka.’
- d. (K) (T)  
 Mitä sinä syöt?  
 what.PAR you.NOM eat.2SG  
 ‘What are you eating?’
- e. (K) (T)  
 Minä siitä ennenkin olen päättänyt.  
 I.NOM it.ELA before-too be.1SG decide.PTCP  
 ‘It is me who has decided on that before, as well.’

Contrastive focus K represents an element (or word) in the sentence that receives a contrastive focus interpretation. Contrastive focus has a focused element that is unexpected for the hearer from the speaker’s perspective. A new information focus is interpreted contrastively. In Vilkuna’s (1989) analysis, interrogative or relative pronouns and discourse particles are located in the K-position and they can be optional. K is needed, since, in Finnish, question pronouns and discourse particles move to the front of the clause (examples 12c-d). The contrastive focus element also needs position in the front of the clause (12b and 12e); in both examples, the fronted element is stressed.

Besides K, the clause has Topic T, which contains the theme of the sentence. It represents what is being spoken ‘about’ in the sentence. The positions of the other participants can often be most easily referred to by relating them to T. The nominal constituent that begins a canonical declarative sentence, is often expressed by Topic T. Hence, T is the constituent that is most naturally constructed as referring to the topic entity. When K is not present in the clause, T is the first element (example 12a).

Vilkuna analyzes the two positions in a linear fashion, one always preceding the other. Vainikka (1989) adopts Vilkuna’s model but she proposes an analysis where K was substituted by the CP-projection and T with the IP-projection both of which are based on the standard GB-theoretical approach to phrase-structure (Chomsky 1981).

The CP represents the traditional left edge of a finite clause, while the IP contains the finiteness. Vainikka (1989) considers that the Finnish C-domain contains at most one projection that is the target of both the discourse related head movement and A'-movement. Thus, only one element can be moved to the CP-projection in Finnish. Wh-word movement to the front of the clause is assumed to target the specifier position of the CP-projection (Vainikka 1989).

As we have already seen in example (12) several kinds of elements can be placed in the left edge of the Finnish finite clause. In (13, examples are modified from Brattico et al. 2014), we will consider various construction types with respect to the CP-projection. The left edge can host a question pronoun (wh-phrase) (13a), such as *mikä* 'what', *kuka* 'who', or overt complementizer (13b).<sup>10</sup> Examples (13c-g) will be described below.

- (13) a. Kenet Merja näki?  
           who Merja.NOM see.3SG.PAST  
           'Who did Merja see?'
- b. Pekka lähtee kotiin, jos alkaa sataa.  
           Pekka.NOM go.3SG home if begin.3SG rain.INF  
           'Pekka (will) go home if it begins to rain.'
- c. Tapasi-ko Pekka Merjan?  
           meet.3SG.PAST-*ko* Pekka.NOM Merja.ACC  
           'Did Pekka meet Merja?'
- d. Pekan-ko Merja näki?  
           Pekka.ACC-*ko* Merja.NOM see.3SG.PAST?  
           'Was it Pekka who Merja saw?'
- e. Pekan-han Merja näki.  
           Pekka.ACC-*han* Merja.NOM see.3SG.PAST.  
           'It was Pekka that Merja saw.'

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<sup>10</sup> Relative clauses and complementizer *että* 'that' are discussed later.

- f. Pekan-pa            Merja            näki.  
       Pekka.ACC-*pA*   Merja.NOM    see.3SG.PAST  
       ‘It was Pekka that Merja saw.’
- g. Pekkaa            Merja            rakasti            (ei    Jukkaa).  
       Pekka.PAR    Merja.NOM    love.3SG.PAST   (not   Jukka.PAR)  
       ‘It was Pekka whom Merja loved, not Jukka.’

In Finnish yes/no questions are formed with the question particle *-kO* (13c-d), which also occurs at the left edge. In regular yes/no questions the question particle *-kO* merges with verb (13c). The verb with the question particle is fronted to the left edge. The question particle can also merge with nouns (13d). This gives rise to an alternative question where a pair of alternatives is offered, and only one is an acceptable response. Again, the NP carrying the question particle must occur at the left edge.

In addition to question material, a discourse particle *-hAn* or *-pA* (13e and 13f) can occur in the left edge, both are suffixed on an NP in these examples. The meaning of the particle *-hAn* is complicated. It often marks the claim of the clause to be obvious fact. It can also express flashes of insight. In questions, *-hAn* makes the question more polite, and it softens a command. As far discourse particle *-pA* intensifies the meaning of the sentence. It has insisting or reinforcing role. Particle *-pA* can be used in situations where it confirms contrastive meaning or desire or proposal. Particles *-pA* and *-hAn* tone whole clause not just the word they are attached to, and they can attach to almost any word as long as the word (or phrase) has been fronted to the left edge. Translating the discourse particles is difficult, but both *-hAn* and *-pA* provide some further information about the speaker’s point of view. A NP can be fronted even without a discourse particle, as in (13g), resulting in contrastive focus (Vilkuna 1989). Contrastive focus contrasts some earlier claim and refers to the coding of information that is contrary to the presuppositions of the interlocutor.

Discourse particles *-hAn* and *-pA* and the question particle *-kO* are always combined with a host word. Only one such host word can occur in a clause at a time, example (14) (these examples are modified from Brattico et al. 2014). In addition, the suffixed word should always move to the front of the clause, otherwise the clause is ungrammatical (14d-e). However, several particles can be suffixed to one and the same

word (14g-h). For example, the *wh*-pronoun can be combined with discourse particles (14h).

- (14) a. \*Pekka-han rakastaa Merjaa-han.  
           Pekka-*hAn* loves     Merja-*hAn*.  
       b. \*Pekka-han rakastaa Merjaa-pa.  
           Pekka-*hAn* loves     Merjaa-*pA*.  
       c. \*Pekka-ko rakastaa Merjaa-han?  
           Pekka-*kO* loves     Merja-*hAn*?  
           ('Is it Pekka who loves Merja?')  
       d. \*Pekka rakastaa Merjaa-ko?  
           \*Pekka loves         Merjaa-*kO*?  
           ('Is it Merja whom Pekka loves?')  
       e. \*Pekka rakastaa Merjaa-han.  
           \*Pekka loves         Merja-*hAn*.  
           ('It's Merja that Pekka loves.')
- f. Missä-hän Pekka asuu?  
       where-*hAn* Pekka lives  
       ('I wonder) where Pekka lives?')
- g. Merjaa-ko-han Pekka rakastaa?  
       Merjaa-*kO-hAn* Pekka loves  
       ('I wonder) is it Merja who Pekka loves')
- h. Minne-kö-hän Merja lähti?  
       where-*kO-hAn* Merja went  
       ('I wonder) where Merja went?')

Summarizing, based on Vilkuna's work on the K position, Vainikka's (1989) analysis has only one CP-level projection, which hosts all the left edge phenomena, such as question pronouns, complementizers and discourse particles. The next section shows that in Finnish more structure is needed at the CP-level.



## 2.4.2 The second CP-level projection with *että* ‘that’

Koskinen (1998) shows, that in Finnish *wh*-word and complementizer *että* ‘that’ can be in the same clause (15, examples are modified from Koskinen 1998). These data tell us that, only one CP position is not enough in Finnish.

- (15) a. Pekka            miettii            että    ostaako            hän            Merjalle  
          Pekka.NOM   wonder.3SG   that   buy.3SG-*kO*   he.NOM   Merja.ALL  
          kukkia.  
          flower.PL.PAR  
          ‘Pekka wonders whether he will buy flowers for Merja.’
- b. Pekka            pohti                            että    ketä            Merja            rakastaa.  
          Pekka.NOM   wonder.3SG.PAST   that   whom   Merja.NOM   love.3SG  
          ‘Pekka wondered whom Merja loves.’
- c. Pekka            ymmärsi                    että    Merja-han            rakastaa  
          Pekka.NOM   realize.3SG.PAST   that   Merja.NOM-*hAn* love.3SG  
          Timoa.  
          Timo.PAR  
          ‘Pekka realized that Merja loves Timo.’

Koskinen (1998) continues the tradition that begun by Vainikka (1989) begins, where the left edge of Finnish is described in phrase-structural terms. Koskinen (1998) therefore adds one more position above Vilku’s (1989) K and T, so in her analysis Finnish left edge actually has three positions. Koskinen calls them CP, Focus and Topic. Topic is equivalent to Vilku’s T; Focus is the same as her K-position. Furthermore, Focus is the place for focused elements (example 13e-g) and question particles (example 13c-d) and question pronouns (example 13a).<sup>11</sup> The third CP-layer hosts the complementizer *että* ‘that’. The CP is lacking a specifier position — no phrase in Finnish can precede *että* ‘that’. According to Koskinen, the function of CP is to determine the type of the clause, thus whether it is a declarative, an imperative or an

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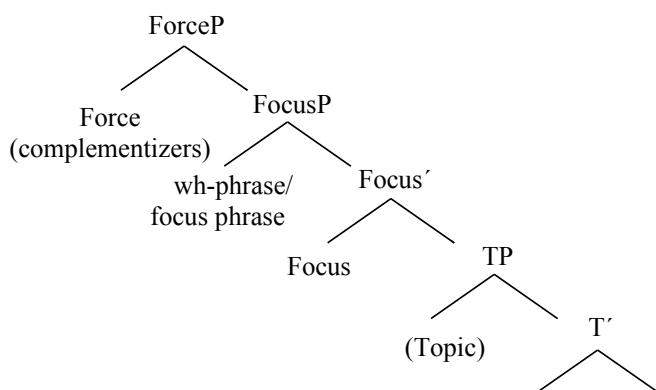
<sup>11</sup> Relative pronouns are discussed later.

interrogative. In sum, CP is the place for complementizers, and Focus is place for question and elements with discourse or question particle. Although the evidence for an additional CP-layer comes from the complementizer *että* ‘that’, Koskinen assumes that all the Finnish complementizers involve the higher CP-projection.<sup>12</sup>

Manninen (2003) and more recently, Huhmarniemi (2012) have updated Koskinen’s proposal slightly, based on Rizzi (1997). Vilkkuna’s original T (Vainikka’s IP) is now Tense Phrase (TP), containing the same topic phrase (e.g. the subject NP) as earlier.

Above the TP, we now have Focus phrase, and above it an optional ForceP, as in example (16).<sup>13</sup> Overt complementizer is on Force. The highest projection ForceP relates the finite clause to the speech act. The finite verb selects the ForceP in case of finite complement clauses.

(16)



When particles (*-kO*, *-hAn*, *-pA*) attach to a verb (as in a yes/no question), the verb with the particle is fronted to Focus under head movement. If the particle is attached to an NP (as in an alternative question), the phrase moves to [Spec,FocusP] under A'-movement. Similarly, wh-movement and contrastive focus involve A'-movement of an element to the specifier position of FocusP. I will return to Huhmarniemi’s work in section 2.4.4. after a discussion of relative clauses.

<sup>12</sup> This assumption is not valid any more, see the next section.

<sup>13</sup> Later FinP-projection will be added between FocusP and TP.

### 2.4.3 Less structure for relative clauses

The left edge of the Finnish finite clause can host a relative pronoun (17), such as *joka* ‘who’ resulting in a relative clause.

- (17) Mies,                jonka        Merja        näki.  
        man.NOM        who.ACC Merja.NOM    see.3SG.PAST  
        ‘A man whom Merja saw.’

Relative pronouns introduce relative clauses. In a relative clause, one of the arguments shares a referent with a main clause element on which the subordinate clause is grammatically dependent. Typically, a relative clause modifies a noun or noun phrase.

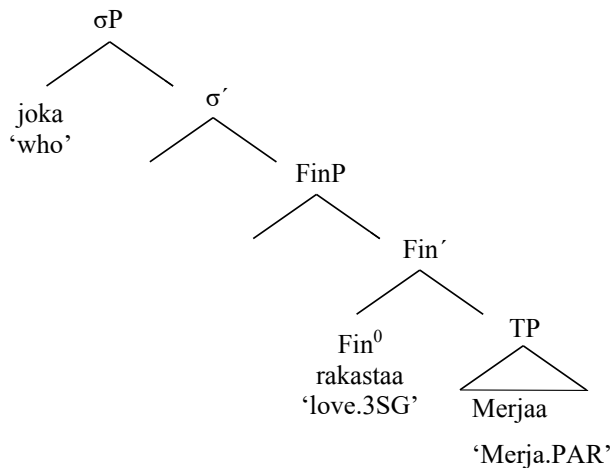
Brattico, Huhmarniemi, Purma and Vainikka (2014, henceforth BHPV) noticed that relative pronouns systematically differ from other left periphery elements, as can be seen in example (18). All the examples here come from BHPV. The relative pronoun moves to the left peripheral position, but it cannot host the discourse suffixes or the yes/no question particle *-kO*. Embedding questions with the complementizer *että* ‘that’ are possible in Finnish (18d), but a relative clause has no room for a complementizer in a relative clause (18e). Other CP-related phenomena that BHPV discuss are missing in the relative clause. These are echo reading, contrastive focus and multiple relativization.

- (18) a. \*mies,    jonka-han Merja    näki\_\_.  
        man,    whom-*hAn* Merja    saw  
        b. \*mies,    jonka-ko Merja    näki\_\_.  
        man,    whom-*kO* Merja    saw  
        c. \*mies,    jonka-ko-han Merja    näki\_\_.  
        man,    whom-*kO-hAn* Merja    saw  
        d. Pekka    pohti        että ketä        Merja    rakastaa \_\_.  
        Pekka    wondered    that    whom    Merja    loves  
        ‘Pekka wondered who Merja loves.’

- e. \*mies, että jota Merja rakastaa \_\_\_\_.  
 man that whom Merja loves

So, BHPV argue that relative clauses in Finnish have less structure than other CPs, and therefore the left edge of the relative clauses is very restricted. Thus, relative pronouns occupy the left edge position of Finnish finite clause, but they are nevertheless incompatible with much of the left peripheral elements. BHPV assume that relative clauses may not have the same clause structure as other clauses, because in relative clauses the range of elements that can be moved to the left edge position is different from what can be moved in other left edge phenomena. BHPV suggest structure in example (19) to deal with discrepancy with relative clauses and other CP elements.  $\sigma$ P is the same as FocusP in tree (16).  $\sigma$  is used because the Finnish relative clause cannot contain a focus interpretation on a fronted element. The tree in (19) includes FinP between TP and  $\sigma$ P.<sup>14</sup>

(19)



BHPV propose that the projection that is lacking in the Finnish relative clause is ForceP, the projection that represents clause type (declarative, question or imperative). According to BHPV, relative clauses do not have Force-projection as they are not

<sup>14</sup> The literature of Finnish syntax has proposals where FinP can be present or absent. When FinP is included it corresponds Vainikka's (1989) traditional IP and contains the subject.

declaratives, interrogatives or imperatives, and no complementizer can occur above the relative pronoun. Thus, the highest Force-projection seems to be missing. Based on original insight from Vilkuna (1989), Vainikka (1989), and Koskinen (1998), BHPV, nevertheless, assume that all the left edge elements occupy the same position (Vilkuna's K-position, Vainikka's CP, and Koskinen's Focus-projection). They argue that A-bar movement has the same restrictions and mechanism regardless of what type of element is moved to the left edge. Thus, BHPV claim that all the elements with such movement have the same target site in the left edge, a position they call [Spec, $\sigma$ P]. The label sigma is used because that position does not associate with clear semantic function, and thus a label such as "Focus" would be misleading.

BHPV propose that Force is absent from relative clauses and based on this they cannot inherit the same features from Force as other left peripheral features. Finite clauses, that are not relative clauses, the left edge features have been inherited from Force, the features are checked either by head movement as in example (20a), or by phrasal movement, as in example (20b).

- (20) a. Onko Pekka \_\_\_\_ lähtenyt matkalle?  
           has-*kO* Pekka           left     trip.to  
           'Has Pekka left on a trip?'  
       b. Kenen kirjan Pekka osti \_\_\_\_?  
           whose book Pekka bought  
           'Whose book did Pekka buy \_\_\_\_?'

Thus, Finnish can only have head movement or phrasal movement to the left edge but not both (21). This is because only one set of features has been inherited from Force, not two.

- (21) \*On matkalle-han Pekka \_\_\_\_ lähtenyt \_\_\_\_!  
       \*is trip.to-*hAn*       Pekka     left  
       ('Yes, it's on a trip that Pekka has gone')

In Finnish relative clauses, the  $\sigma$ P-projection (equivalent of FocusP or the earlier CP) does not inherit any features (from ForceP); thus, feature checking does not cause

or allow fronting of the various left edge elements. The missing ForceP then explains the relative clause pattern, although relative pronouns themselves occupy the usual left edge position, equivalent to FocusP. Feature inheritance is adopted from Chomsky (2008), who proposes a similar mechanism for finiteness. According to Chomsky, features of finiteness in various languages are inherited from C to T, explaining why verbs obtain properties of finite elements when embedded under C. Brattico and Huhmarniemi (2006) defend the same model for Finnish. However, in this study, we assume a separate Fin-head to represent finiteness.

#### 2.4.4 A new phenomenon of secondary movement

Finally, I will briefly describe the latest CP-related phenomenon discovered in Finnish, by Huhmarniemi (2012). Regular wh-movement, such as in example (22), will be referred to as ‘primary movement’. Under primary movement, just a single instance of movement takes place.

- (22) Minkä Pekka korjasi \_\_?  
 ‘What did Pekka fix?’

When the particles (*-ko*, *-han*, *-pa*) are suffixed to an NP, as has already been discussed, wh-movement and contrastive focus involve A’-movement of an element to the specifier position of FocusP. The new phenomenon observed by Huhmarniemi is called secondary movement, exemplified in (23, examples are from Huhmarniemi (2012:63)).

- (23) a. Pekka                      näki Merjan              [kävellessään [kohti              puistoa]]  
          Pekka.NOM              saw Merja.ACC              walk.INF              towards              park.PAR  
          ‘Pekka saw Merja when he was walking towards a/the park.’  
       b. [Mitä                      kohti \_\_]              kävellessään \_\_]              Pekka              näki  
          what.PAR              towards              walk.INF                      Pekka.NOM              saw  
          Merjan\_\_?  
          Merja.ACC  
          ‘What was Pekka walking towards when he saw Merja?’

In (23b), the object wh-phrase *mitä* ‘what’ moves to the edge of the preposition phrase giving rise to *mitä kohti*, literally ‘what towards’. Next, the preposition phrase moves to the edge of the non-finite clause resulting in the order *mitä kohti kävellessään*, literally ‘what towards walking’. Finally, the non-finite clause moves to the left edge, or to the [Spec,FocusP] position. What is happening during the derivation of (23b) is that when wh-phrase moves upwards in the structure, it gathers more and more phrase structure around it. In contrast to primary movement, which has only one movement, secondary movement has several intermediate movement steps.

Huhmarniemi (2012) argues that the Focus head has an EPP-feature that triggers the movement of the wh-phrase to the specifier of Focus. According to Huhmarniemi and Brattico (2013), primary and secondary movements involve fundamentally the same process, as they have the same triggers and constraints, and the EPP-feature is a formal mechanism. For details on the analysis of secondary movement in Finnish, see Huhmarniemi (2012). My data has no instances of secondary movement, so I will not discuss it further here.

## 2.5 Agreement and null subjects

In this section I will describe finite and non-finite agreement and the distribution of Finnish null subjects. In standard Finnish, the finite verb agrees with its nominative subject in person and number but not in gender (24). A nominative subject can be omitted in the first or second person, but not when the verb is in the third person.<sup>15</sup>

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<sup>15</sup> The subject omission in third person is sometimes possible, such as in embedded clauses (Biberauer et al. 2009).

(1) Pekka                      muisti                      että oli                      jättänyt                      takin                      kotiin.  
Pekka.NOM      remember.3SG.PAST      that be.3SG.PAST      left.PTCP      coat.ACC home  
‘Pekka remembered that he had left his coat home.’

Furthermore, Finnish has missing person constructions where the third person singular subject can be left out, see Hakulinen ja Karttunen (1973). These constructions have generic reading.

- (24) a. (Minä) syön omenaa.  
 (I) eat.1SG apple.PAR  
 ‘I (am) eating an apple.’
- b. (Sinä) syöt omenaa.  
 (you) eat.2SG apple.PAR  
 ‘You (are) eating an apple.’
- c. Pekka syö omenaa.  
 Pekka eat.3SG apple.PAR  
 ‘Pekka (is) eating an apple.’
- d. (Me) syömmе omenaa.  
 (we) eat.1PL apple.PAR  
 ‘We (are) eating an apple.’
- e. (Te) syötte omenaa.  
 (you) eat.2PL apple.PAR  
 ‘You (are) eating an apple.’
- f. He syövät omenaa.  
 they eat.3PL apple.PAR  
 ‘They (are) eating an apple.’

The examples in (24) describe standard Finnish, but spoken Finnish has a different pattern. In general, the nominative subject cannot be omitted in spoken Finnish (25), see Vainikka (1989), and Vainikka and Levy (1999). Since my first language acquisition data involves spoken Finnish from the Helsinki area, I take the target of acquisition to be a grammar in which nominative subjects cannot be omitted in any person. Standard Finnish is only likely to be acquired later, in connection with reading. I will give more examples later from my children’s language data.

- (25) a. Mä meen nyt.  
 I.NOM go.1SG now  
 ‘I’m going now.’
- b. \*meen nyt.  
 \*go.1SG now



Lappalainen (2004) has studied the adult spoken Finnish from the Helsinki area. This study had six couples, one single man and one single woman in addition to the host couple that consisted of the researcher and her spouse. Thus, together this study had eight women and eight men. Lappalainen made the recordings (except for one) in her home, which she shared with her spouse who also took part in the conversations. All the couples had visited in the host couple's home before, and the couples knew each other from before. Only one couple visited at a time. The single man discussed together with the researcher's spouse. The single woman was discussing with the researcher and her spouse. The four of the couples had small children with them. All of them had two children. Only one couple seemed to be excited about recording, and they made comments on that. Most of the recordings were done between December 1995 and January 1996. The recordings were about one hour long from which half an hour were transcribed. The data included about four hours of the transcribed conversations.

In Lappalainen's study, most of the overt subjects were with singular verb forms. Altogether 83% of the utterances appeared with a pronoun subject, and these utterances involve all the singular and plural occurrences (in first person plural, only utterances with agreed verb forms are included). In Lappalainen's research women's percentages with overt subjects varied between 80 % and 100 % and men's percentages were slightly less than women, varying between 61 % and 91 %. <sup>16</sup> Since the subjects were more often dropped from second person than in the first person, the pronoun subjects from first person singular accounted for 90%. Thus, according to Lappalainen's study, spoken Finnish (at least in the Helsinki area) is basically a non-pro-drop language.

In addition, the spoken Finnish differs from standard Finnish in that the (impersonal) passive form is used for first person plural, as in (26a). Furthermore, the number distinction is not made in third person, such that the third person singular form is used for plural, as well, as in (26b).

- (26) a. Me            luettiin            kirja.  
           we.NOM   read.PASS.PAST   book.ACC  
           'We read a book.'

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<sup>16</sup> The discussion for the different percentages for women and men is over the scope of this thesis and it is not considered here.

- b. Kissat juo maitoa.  
 cat.PL.NOM drink.3SG milk.PAR  
 ‘(The) cats drink/(are) drinking milk.’

As it has been seen earlier (in section 2.2.1) with modal verbs, genitive subjects are used in Finnish (27, a and b are repeated from example 3a-b). The modal verb does not agree with a subject and a main verb is in an infinitive form. Thus, the modal verb occurs in the unmarked third person singular form, regardless of the subject. The genitive subject cannot be omitted, as shown in (27d), except in generic ‘one’ reading mentioned in the footnote (13).

- (27) a. Minun täytyy lähteä.  
 I.GEN must leave.INF  
 ‘I must leave.’  
 b. Pekan täytyy syödä omena.  
 Pekka.GEN must eat.INF apple.ACC  
 ‘Pekka must eat an apple.’  
 c. \*täytyy lähteä.  
 \*must leave

In addition to the genitive, the partitive can also be the case of the subject in Finnish, but this is restricted to psychological verbs (28a-b) and verbs that describe body functions (28c-d). If the subject is in the partitive, agreement is missing; the verb again occurs in the unmarked third person singular form. The partitive subject cannot be omitted (28e), but a generic reading is possible without a subject, see footnote (13).

- (28) a. Minua pelottaa.  
 I.PAR scare.3SG  
 ‘I’m scared.’  
 b. Pekkaa pelottaa  
 Pekka.PAR scare.3SG  
 ‘Pekka is scared.’

- c. Minua     janottaa.  
I.PAR     thirsty.3SG  
'I feel thirsty.'
- d. Pekkaa     janottaa.  
Pekka.PAR     thirsty.3SG  
'Pekka feels thirsty.'
- e. \*pelottaa.  
\*scared.

The imperative has singular and plural forms (29a-b), and it also has negative forms (29c-d). The imperative has agreement forms that are distinct from those of other finite verbs. The usual negative stem E- is not possible in the imperative. The subject may optionally occur in imperatives (29d), but usually the imperative occurs without them (29a-c).

- (29) a. anna             pallo!  
         give.2SG.IMP     ball.ACC  
         'Give (me) the ball!'
- b. antakaa             pallo!  
         give.2PL.IMP     ball.ACC  
         'Give (us/me) the ball!'
- c. älä             ota     palloa!  
         not.2SG.IMP     take     ball.PAR  
         'Don't take the ball!'
- d. älkää             (te)             ottako     palloa!  
         not.2PL.IMP     you.NOM     take             ball.PAR  
         'Don't take the ball!'

The other phenomenon where agreement features are seen are the possessive suffixes (see section 2.6.2.2 for possessive marking), which works in the same way as finite verbs.<sup>17</sup>

## 2.6 Case marking

In this section, I will give a brief discussion of the Finnish case system. Cases are a relevant part of Finnish morphosyntax even though they are not analyzed in the data analysis chapter. Finnish has a total of 15 morphological cases, of which three are rare in spoken Finnish (the abessive, the instructive, and the comitative), and which do not occur in the child data and will not be discussed here further. Most nouns, adjectives, pronouns, and numerals inside the noun phrase show case inflection (whether grammatical or semantic case). Of the remaining 12 cases, eight are semantic cases, and four are grammatical cases. The semantic cases will be described first.

### 2.6.1 Semantic cases

Finnish has six locative cases (inessive, elative, illative, adessive ablative and allative) and two abstract locative cases (essive and translative). The latter two are sometimes referred to as ‘small clause cases’ (Vainikka 1993). Locative cases express, as the name indicates, a location. They correspond to English prepositions in their semantic interpretation.

The six locative cases are exemplified in (30). The inessive (‘in the house’, (30a)) and adessive (‘on/at the bridge’, (30d)) express that someone or something is located in, on, or near some place or space. The elative (‘from inside the house’, (30b)) and ablative (‘from the bridge’, (30e)) express that someone or something is moving out from some place or space or moving away from someone’s possession. The illative (‘into the house’, (30c)) and allative (‘to the bridge’, (30f)) express that someone or something is moving to some place or space or into someone’s possession. The three

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<sup>17</sup> The possessive is also used in some infinitive structures (see Koskinen (1998)), but they are not discussed here because they are not relevant to my data.

cases in (30a-c) form a set of so-called ‘internal locatives’ having to do with the inside of something, while the cases in (30d-f) are a set of the corresponding ‘external locatives’, dealing with the outside of something.

- (30) a. Pekka            asuu            talo-ssa.  
          Pekka.NOM   live.3SG   house.INE  
          ‘Pekka lives in the house.’
- b. Pekka            lähtee            talo-sta.  
          Pekka.NOM   leave.3SG   house.ELA  
          ‘Pekka leaves from (inside) the house.’
- c. Pekka            tulee            talo-on.  
          Pekka.NOM   come.3SG   house.ILL  
          ‘Pekka comes into the house.’
- d. Pekka            kävelee            silla-lla.  
          Pekka.NOM   walk.3SG   bridge.ADE  
          ‘Pekka walks on the bridge.’
- e. Pekka            tulee            silla-lta.  
          Pekka.NOM   come.3SG   bridge.ABL  
          ‘Pekka comes from the bridge’
- f. Pekka            tulee            silla-lle  
          Pekka.NOM   come.3SG   bridge.ALL  
          ‘Pekka comes to the bridge.’

For more details on the locative cases in Finnish, see Nikanne (1993); he proposes that semantic cases in Finnish involve a PP-projection.

Finally, consider (31), which shows how the essive and translative are used:

- (31) a. Pekka            esiintyy            kissa-na.  
          Pekka.NOM   perform.3SG   cat.ESS  
          ‘Pekka performs as a cat.’

- b. Pekka            pukeutuu    kissa-ksi.  
       Pekka.NOM   dress.3SG   cat.TRANSL  
       ‘Pekka is dressing up as a cat.’
- c. Pekka            seisoo        vakava-na.  
       Pekka.NOM   stand.3SG   serious.ESS  
       ‘Pekka is standing there serious.’
- d. Pekka            kasvaa        iso-ksi.  
       Pekka.NOM   grow.3SG   big.TRANSL  
       ‘Pekka (is) growing.’

The essive case indicates a stative state and the translative a change of state.

## 2.6.2 Structural case

Finnish has four structural, or grammatical, cases which are nominative, partitive, accusative and genitive. These are cases that are typically not associated with a fixed thematic or semantic role but depend on the structure of the sentence. The nominative is the unmarked subject case in Finnish, while the accusative, genitive and partitive are all used to mark the direct object. In addition, they serve several additional functions, which I will described later.

### 2.6.2.1 Subject case marking

The nominative is the subject case in Finnish in intransitive and transitive clauses (32) with a finite verb. The singular nominative form does not have any suffix (or it is Ø). In the plural, the suffix is *-t*.

- (32) a. Pekka            nukkuu.  
       Pekka.NOM   sleep.3SG  
       ‘Pekka (is) sleeping.’

- b. Hän            syö            omenaa.  
       s/he.NOM eat.3SG apple.PAR  
       ‘S/he (is) eating an apple.’
- c. Pekka            näki            tytöt.  
       Pekka.NOM see.3SG.PAST girl.PL.ACC  
       ‘Pekka saw the girls.’
- d. Te            näitte            lehmän.  
       you.NOM see.2PL.PAST cow.ACC  
       ‘You saw the cow.’

As discussed in section 2.5, subjects in Finnish can be either genitive or partitive, in addition to the agreeing nominative subject. The genitive is marked with the suffix *-n*, and the partitive with the suffix *-a*.<sup>18</sup> These non-nominative subjects occur when the verb does not agree with the subject NP (33).

- (33) a. Lapsia            leikkii            kadulla.  
       child.PL.PAR play.3SG street.ADE  
       ‘Children play in the street.’
- b. Minua    pelottaa  
       I.PAR scare.3SG  
       ‘I am scared.’
- c. Minun    täytyy            mennä  
       I.GEN must.3SG go.INF  
       ‘I have to go.’
- d. Pekan            pitää            lähteä  
       Pekka.GEN must.3SG leave.INF  
       ‘Pekka must leave.’

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<sup>18</sup> The partitive has four forms due to vowel harmony and other phonological conditions (1).

- (1) a. leipä-*ä*/            omena-*a*  
       bread.PAR/        apple.PAR  
       b. voi-*ta*/            työ-*tä*  
       butter.PAR        work.PAR

### 2.6.2.2 Possessive marking

The main function of the genitive in Finnish is marking a possessor, as in examples (34) and (35). Examples in (34) represent standard Finnish and in (35) spoken Finnish. The genitive modifies a noun and occurs in the specifier position. When the genitive possessor is a human pronoun, as in (39c-d), a possessive suffix, that agrees with the possessor in person and number, is added to the head noun. Recall that the first and second person nominative subjects can be omitted in standard Finnish; similarly, the first and second person genitive possessor can be omitted.

- (34) a. pojan kirja  
boy.GEN book.NOM  
'the boy's book'
- b. Marin kirja  
Mari.GEN book.NOM  
'Mari's book'
- c. (minun) kirja-ni  
(I.GEN) book.PX/1SG  
'my book'
- d. hänen kirja-nsa  
s/he.GEN book.PX/3SG  
'his/her book'
- e. Pekka näki veljensä.  
Pekka see.3SG.PAST brother.PX/3SG  
'Pekka saw his brother.'
- f. \*Veljensä koira ei pidä Pekasta.  
\*brother.PX/3SG dog.NOM not.3SG like Pekka.ELA  
( 'His brother's dog does not like Pekka.' )

The third person has two options for possessive. If the sentence has a pronoun in it, the possessive suffix is used (34d). Possessive suffix, however, cannot be used, if the sentence has a noun with genitive case, but the modified noun is in the nominative case



(34a and b). The third person pronoun can be dropped if the possessive suffix has an element that binds it (34e). Example (34f) is ungrammatical because the noun *veljensä* ‘brother.PX/3SG’ is not bound.

Nouns with a third person possessive suffix ending must be bound, but in the first and second persons this is not the case (Trosterud 1993). When the noun with possessive suffix ending is bound, it has some other element in the clause that determines its reference within a linguistically specifiable domain. However, the third person singular Px can be omitted in some situations; see Huhmarniemi and Brattico (2015).

In spoken Finnish, the genitive possessor is typically used without a possessive suffix (35a and b). In addition, non-human pronouns are used in third person, and they do not take a possessive suffix (35c). Further, a first and second person possessive suffix behaves like the finite verb (35) in that the genitive possessor cannot be omitted (at least in the area of Helsinki).

- (35) a. mun kirja  
           I.GEN book.NOM  
           ‘my book’  
       b. teidän kirja  
           you.GEN book.NOM  
           ‘your book’  
       c. sen kirja  
           it.GEN book.NOM  
           ‘its book’

Both finite agreement and possessive suffixes behave similarly in terms of omitting the subject/possessor NP both in standard and spoken Finnish. At least the language form spoken in the Helsinki area differs, and the possessive suffix itself is typically omitted, as in examples (35a and b). That is, the combination of genitive possessive suffix and a Px is no longer used; however, the Px is even used in the Finnish spoken

in Helsinki when a genitive possessor does not occur, as in the binding examples (34e).<sup>19</sup>

Other usages of the genitive in Finnish include intensifiers of adjectives, like (36a) and a complement of a postposition when the genitive precedes the postposition (36b). A postposition is equivalent to a preposition except a postposition follows the NP whereas the PP precedes it. For details on the distribution of the Finnish genitive, see Vainikka (2011).

- (36) a. valtavan iso  
           huge.GEN big.NOM  
           ‘huge’  
       b. minun lähelläni  
           I.GEN near.PX/1SG  
           ‘near me’

Furthermore, the genitive can occur as the subject of impersonal verb, as is discussed section 2.5. The object usage of the genitive is discussed in the next section.

### **2.6.2.3 Object case marking**

Finnish has two object cases, which are the accusative and the partitive. The partitive has been argued to be a general complement case in Finnish, and it is also the most common object case in Finnish (Kiparsky 2001; Vainikka 1993). It occurs as the

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<sup>19</sup> In some situations, in spoken Finnish a genitive possessor can be used in binding situations as (1a), but often Px is the better choice (1b) and a genitive possessor sounds odd. The example in (1b) is conveying a reflexive reading.

- (1) a. Virtaset löysi niiden koiran.  
       Virtanen.PL.NOM find.3SG.PAST they.GEN dog.ACC  
       ‘The Virtanens found their dog.’  
       b. Pekka pesi kätensä/ ?\*sen kädet  
       Pekka.NOM wash.3SG.PAST hand.P3SG/ ?\*he.GEN hand.NOM.PL  
       ‘Pekka washed his hands/?\*his hands.’

complement of prepositions, quantifiers, numerals and comparative adjectives (in addition to verbs). The partitive has not only semantic meaning, corresponding to the different meanings of whole set and part of the set. In Finnish, partitive is also a grammatical case.

Example (37) presents object cases in Finnish. First, the direct object case is always partitive if it is in the scope of negation as in (37a and e). Second, if the clause is an affirmative, the partitive represents an imperfective aspect of the clause. In example (37b) the partitive expresses that part of the bread is eaten by Pekka and in (37c) the accusative expresses that Pekka eats the whole bread.<sup>20</sup> Example (37d) is a further instance of perfective aspect where partitive cannot be used. For more on the partitive/accusative variation in Finnish, see Kiparsky (2001).

- (37) a. Pekka            ei            syö   leipä-ä/    \*leivä-n/    \*leipä.  
          Pekka.NOM   not.3SG   eat   bread.PAR/\*bread.ACC/   \*bread.NOM  
          ‘Pekka is not eating bread.’
- b. Pekka            syö            leipä-ä.  
          Pekka.NOM   eat.3SG   bread.PAR  
          ‘Pekka is eating bread.’
- c. Pekka            syö            leivä-n.  
          Pekka.NOM   eat.3SG   bread.ACC  
          ‘Pekka is eating the bread.’
- d. Pekka            voitti                    kilpailun/                    \*kilpailua.  
          Pekka.NOM   win.3SG.PAST   competition.ACC/   \*competition.PAR  
          ‘Pekka won a competition.’

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<sup>20</sup> Further example partitive accusative distribution is when the partitive is used in the plural to mark indefiniteness and the accusative marks definiteness.

- (1) a. Pekka näki   lehm-i-ä  
          Pekka saw   cow.PL.PAR  
          ‘Pekka saw (some) cows.’
- b. Pekka näki   lehmä-t  
          Pekka saw   cow.PL.NOM  
          ‘Pekka saw the cows.’

- e. Pekka            ei            voittanut   kilpailua/            \*kilpailun.  
 Pekka.NOM   not.3SG win.PTCP   competition.PAR/   \*competition.ACC  
 ‘Pekka did not win a competition.’

The second object case, the accusative, is used with perfective aspect. The complication with the accusative is that it has three realizations, accusative, genitive, or nominative. However, it is unclear (and not so relevant for my data) whether the accusative is truly a Structural Case — regardless of this it is a grammatical case. Unlike the partitive, it can only be assigned by an aspectually perfective/telic verb, and no other syntactic heads. In effect, the direct object cases in Finnish has four options. They are nominative, genitive, partitive or accusative.

As have been shown, the accusative case is used with perfective aspect. However, only personal pronouns have a unique accusative, see (38a) where the unique accusative form is used. The accusatives that do not have lexical accusative forms occur in genitive or nominative, in the singular.<sup>21</sup> The choice of genitive versus nominative depends on agreement; genitive with agreement (38b) and nominative without agreement (38c). Note that agreement is between the subject and a finite verb; and has nothing to do with the object itself.

- (38) a. Pekka            näki            sinu-t.  
          Pekka.NOM   see.3SG.PAST   you.ACC  
          ‘Pekka saw you.’  
       b. Minä            näin            lehmä-n/   \*lehmä.  
          I.NOM   see.1SG.PAST   cow.GEN/ \*cow.NOM  
          ‘I saw a cow.’  
       c. Me            nähtiin            lehmä/            \*lehmän.  
          we.NOM   see.PASS.PAST   cow.NOM/ \*cow.GEN  
          ‘We saw a cow.’

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<sup>21</sup> In the plural the accusative takes the ending *-t*, but it also marks plural nominative (1).

(1) Pekka näki lehmä-t.  
 Pekka saw cow.NOM.PL  
 ‘Pekka saw the cows.’

See more details on the distribution of the forms of the accusative in Vainikka and Brattico (2014).

In summary, Finnish has four grammatical cases, and they have various functions or realizations. The nominative (with suffix  $\emptyset$ ) is the subject case with agreement in the verb, as well as one of the realizations of the accusative case. The genitive (with the suffix  $-n$ ) is the case of possessors, complements of postpositions, intensifier of an adjective, non-agreeing subjects, and one of the realizations of the accusative case. The partitive (suffix  $-A$ ) is a general complement case, following the head: complement of prepositions, numerals, quantifiers, and the comparative adjective, as well as object of a verb in negative sentences and with imperfective aspect; furthermore, it occurs as a subject with non-agreeing psychological verbs. The accusative is only used as an object of a verb, indicating perfective aspect; only human pronouns have a unique accusative form (suffix  $-t$ ); other NPs with accusative case are realized with the genitive suffix ( $-n$ ) or in nominative ( $\emptyset$ ), depending on the syntactic context of the accusative.

## **3 BASIC PHENOMENON IN CHILD LANGUAGE ACQUISITION**

### **3.1 Introduction**

Child language differs from adult language. Children omit elements that are obligatory in the adult language, such as subjects of the clause, articles and auxiliaries. Their utterances are shorter than those of adults, and they do not use all the same clause types as adults. For example, children do not have relative clauses and subordinate clauses in their early speech. One way to explain children's missing elements is to say that children do not have adult's full linguistic competence from the beginning of language acquisition (e.g. Radford 1990). This could explain errors children make in speech. Another possibility is to say that children have the full linguistic competence from the beginning of language acquisition (e.g. Poeppel and Wexler 1993). In this approach, an explanation should be given as to why children still make mistakes, even though they have full linguistic competence.

In this chapter I will present three significant phenomena and theories relevant to these phenomena in child language acquisition from languages other than Finnish. The first phenomenon is subject omission in child language. Children tend to omit the subject NP even when it is obligatory in adult grammar. Second, I introduce the so-called Root Infinitives (RIs) in child language. In this phenomenon, the child produces a non-adult verb form in root clauses where the adult uses a finite verb form. The last phenomenon is the presence or absence of functional categories in child language (related to grammatical elements such as tense, agreement, and question markers).

### **3.2 Subjectless sentences in child language**

It is well known fact that children tend to omit elements required in adult language. One of these elements is the subject of the clause (Hyams 1986; Hyams and Wexler 1993; Hamann and Plunkett 1998; Haegeman 1995). Children omit subjects even when they are obligatory in the adult target grammar as in English (Ortifelli and Hyams

2008). Example (39) shows subject omission in the English child language non-imperative contexts as they come from Bloom (1970).

- (39) a. Play it.  
b. Eating cereal.  
c. Shake hands.  
d. See window.  
e. Want more apple.  
f. No go in.

In adult languages, subjects can be dropped if the language has a rich verbal inflectional system or the missing argument can be identified in the discourse; for these and other discussions of null subjects see Biberauer et. al (2009). Subject omission by children has two different accounts that are grammatical accounts (Hyams 1986; Hyams and Wexler 1993; Rizzi 1993 and Schütze and Wexler 1996) and processing or performance accounts (Bloom 1990; Valian 1991).

Under the original grammatical analysis of children's null subjects, which is no longer up to date, Hyams (1986) explains subject omission by children as the missetting of a grammatical parameter. In this view, children adopt a default setting that permits subject omission. In adult pro-drop languages, the dropped subjects are explained by the possibility of inserting an empty pronominal called *pro* in subject position. This option is depending on a parameter called a pro-drop. Hyams (1986) assumes that in the beginning of language acquisition children set this parameter to option pro-drop. Thus, she claims that children, who acquire non-pro-drop languages, misset parameter with the option pro-drop, and, based on this, they omit subjects. She proposes that the recognition of expletive subjects in the target language leads to a parameter reset.

This simple version of pro-drop parameter has a problem. Subject omission by children seems to be more restricted in non-pro-drop languages than in pro-drop languages (Hamann and Plunkett 1998). They indicate that subject omission depends on the richness of verb inflections, and this could be a pro-drop or topic-drop phenomenon. In topic-drop the missing argument is identified in the discourse. Children hear spoken Finnish most of the time, which has a non-pro-drop grammar. But they are also exposed to standard Finnish, which is a partial pro-drop language

where the subjects can be dropped in first and second person but not in third person (see section 2.5). Therefore, such a simple analysis of pro-drop would not work for Finnish child language; the acquisition of Finnish null subjects will be addressed in section 6.1.

According to Bloom (1990), children may omit a subject only when its meaning can be interpreted from context. Processing accounts (e.g. Bloom 1990, Valian 1991) usually assume that the probability of a constituent being omitted, increases when the length or complexity of the intended utterance grows. Performance limitations assume that very young children cannot say all they mean to say. Thus, children's actual utterances and their intended utterances are mapped imperfectly. Hence constituents that are presented at some deeper level of representation occasionally do not appear in children's utterances (Bloom 1990). Hamann and Plunkett (1998) assume that subjects are likely candidates for omission, because they often encode old or given information. Bloom (1990) suggests that the subjectless VP needs less processing resource than in the subject-accompanied VP. He notes that VPs with missing subjects are longer than VPs with subjects. He also proposes that processing the beginning of a sentence demands more resources than the end of the utterance, and this is the reason why children omit subjects but not objects. However, every processing account will encounter problems in the Finnish acquisition data.

Now I turn to grammatical accounts of early null subjects, along with some evidence against the processing accounts. Null subjects often occur with Root Infinitives, a non-adult sentence type that will be discussed in the next section (Rizzi 1993; Schütze and Wexler 1996; Hamann and Plunkett 1998; Hoekstra and Hyams 1998; Josefsson 2002; Wexler 1998). Missing subjects, it will be noted, are not only phenomena in infinitive utterances, finite utterances can also have missing subjects. Missing subjects in finite contexts show a parallel course of development to usage of infinitival utterances (Hamann and Plunkett 1998).

Rizzi (1993) argues that null subjects in children's speech are more restricted than in the use of adults. According to Rizzi, early null subjects in non-pro-drop languages are limited to the specifier of the root (the subject position of reduced clause). He assumes that in adult language null subjects can only occur in the CP root. Thus, the null subject option in the other roots (e.g. TP, VP) is not possible in adult language. This restriction does not work in early child language, and this allows children to use



null subjects in other roots, as well (Rizzi 1993). According to Rizzi (1993), this also provides a theory of clausal truncation in the early phases, which will be discussed in the next section.

Wexler (1998) assumes that both tense and agreement contain the D-feature, which should be checked by raising of the subject. The children have not yet acquired this, and this is the reason for children's null subjects and Root Infinitives (RIs). Wexler (1998) calls this restriction a Unique Checking Constraint (UCC), which allows a D-feature on the subject to only be checked once. This predicts that children learning pro-drop languages should not have the RI phenomenon. This prediction is discussed in next section.

Josefsson (2002) assumes that RIs have the topic-dropped subject, and this explains the children's null subjects. She thinks that the topic-dropped subject has the same properties as overt subjects. So, they are discourse licensed, and based on the fact that they may license a null auxiliary equally well as an overt subject. Wexler (1998) observes that in the RI stage, null subjects are PRO<sup>22</sup> or topic-drop if the verb is non-finite, and topic-drop if the verb is finite. He claims that PRO is grammatically licensed by RIs. Thus, the conditions under which RIs may have null subjects properly include the conditions under which finite verbs may have null subjects. Likewise, Gretsch (2004) proposes that RIs occur with topic dropped subjects, since RIs often express ongoing events or have modal meaning. She argues that the topic-drop frequency of RIs depends on their usage, and that topic-drop is higher if RIs describe ongoing events or have modal meaning.

In an important study, Ortifelli and Hyams (2008) provide evidence against the processing account of null subjects. They study comprehension of null subjects, imperatives and declaratives with English speaking children between 2;6 and 4;0 years of age by a Truth-Value Judgment test. Children under the age of three and half comprehend null subject clauses as declarative clauses and not as imperatives. According to Ortifelli and Hyams (2008), this means that children's null subjects are grammatical phenomena and not the result of performance errors.

In this section I have presented children's null subjects, which have been described either with performance factors or with grammatical accounts. In the processing

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<sup>22</sup> PRO infers to the abstract element typically associated to with infinitival verbs.

accounts, missing subjects have been assumed to be due of complexity of the clause, so more complex clauses have more missing subjects. In the grammatical accounts, the null subjects are explained based on interaction with other grammatical aspects, or with language structure, involving either reduced or deficient structure. The null subject phenomenon is related to children's RIs, since they often occur without subjects, even though null subjects are not restricted only to RIs; for more recent work about the null subjects and Root Infinitives, see Becker, Grinstead and Rothman (2013). Grammatical account will be adopted here to explain the subject system in Finnish child language. Recall, that Finnish children are exposed to two target grammars, since spoken Finnish has a non-pro-drop grammar, and standard Finnish is partial pro-drop where subjects can be omitted in first and second person but not in third (see section 2.5). Children hear standard Finnish from children's books and television programs. Strong evidence for grammatical analysis is also provided by Ortifelli and Hyams (2008).

### **3.3 Root infinitives**

#### **3.3.1 The data**

Much research in first language acquisition has focused on declarative main clauses containing a verb in a nonfinite form. Between two and three years of age children go through a stage in which they use infinitives and other non-finite forms in root contexts that are ungrammatical in the adult target grammar. These clauses are called, following Rizzi (1993), Root Infinitives (RIs)<sup>23</sup>, and they lack a finiteness marker. The verb often occurs in infinitival form and appears to have the syntax of infinitive clause (or other non-finite clause). This phenomenon has been found in many Indo-European languages — as exemplified in (40) —, Swedish (Platzack 1990; Josefsson 2002), English (Brown 1973; Ingram and Thompson 1996; Radford 1990), Dutch (Jordens 1990; Blom 2007), German (Clahsen 1990; Clahsen, Penke and Parodi 1993; Poeppel and Wexler 1993), Russian (Kallestinova 2007), and Danish (Hamann and Plunkett 1998).

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<sup>23</sup>Other terms which are used for the same phenomenon are Optional Infinitive (OI) from Wexler (1994) or Root Default from Paradis and Crago (2001) or non-finite root forms (NRFs) from Legendre et al. (2002).

- (40) a. Die Hose anziehn. (German, Clahsen, Penke and Parodi 1993:410)  
 the trouser put.INF  
 ‘To put the trouser on.’  
 (Hannah 2;6)
- b. Bob op bank liggen. (Dutch, Blom 2007:76)  
 Bob on couch lie.INF  
 ‘Bob lies on the couch.’  
 (Peter 2;0)
- c. Eve sit floor. (English, Brown 1973)  
 Eve sit.INF floor  
 ‘Eve sits on the floor.’  
 (Eve 1;7)
- d. Pappa bära den. (Swedish, Josefsson 2002:273)  
 daddy carry.INF it  
 ‘Daddy carries it.’  
 (Markus, 1;11:12)
- e. En bil sejle. (Danish, Hamann and Plunkett 1998:43)  
 a car sail.INF  
 ‘A car sails.’  
 (Jens 2;0)
- f. Mama sat. (Russian, Kallestinova 2007:100,  
 mommy sleep.INF originally from Brun et al.1999)  
 ‘Mommy is sleeping.’

However, children can distinguish infinitive and finite verb forms from each other even at the stage when RIs are produced (Clahsen 1990; Clahsen, Penke and Parodi 1993; Deprez and Pierce 1993; Guasti 1993; Pierce 1992; Poeppel and Wexler 1993; Wexler 1998). Furthermore, children can place finite verbs and infinitive verbs in their correct syntactic positions in early stages of language acquisition (Clahsen, Penke and Parodi 1993; Guasti 1993; Hoekstra and Hyams 1998; Lasser 2002), as can be seen from the German example (41).

- (41) a. Die Hose anziehn. (Clahsen, Penke and Parodi 1993:410)  
           the trouser put.INF  
           ‘To put the trouser on.’  
           (Hannah 2;6)
- b. Auto fahren. (Clahsen, Penke and Parodi 1993:411)  
      car drive.INF  
      ‘To drive a car.’  
      (Sabrina 1;11)
- c. Da häng das. (Clahsen, Penke and Parodi 1993:411)  
      there hang.1SG it  
      ‘It hangs there.’  
      (Sabrina 1;11)
- d. Gosse nehm du. (Clahsen, Penke and Parodi 1993:411–412)  
      big take.1SG you  
      ‘You take the big (pencil).’  
      (Sabrina 1;11)

As example (41) illustrates, German children use finite verbs in the second position of the clause and infinite verb forms in the final position as in the target grammar. In (41a-b), for example, the infinitive verb occurs in clause final position, whereas examples (41c-d) have inflected/finite verb in the second position of the clause. The crucial difference between child German at this stage and adult German is that children use examples such as (41a-b) as main clauses; in the target grammar, such infinitival clauses are almost always embedded under a finite main clause.

Some researchers have proposed that other verb forms could be an analogue to RIs, imperative in Italian (42b) (Salustri and Hyams 2003) or participle in Greek (42c) (Varlokosta, Vainikka and Rohrbacher 1998; Hyams 2002). In languages, such as Dutch, German or French, the non-finite forms are actual infinitives, as evidenced by the presence of the infinitival morpheme on the verb. However, in languages that lack infinitival morphology (e.g. English), bare forms that do not have tense or agreement morphology can be interpreted as being equivalent to RIs (42a).

- (42) a. Pig go in. (Radford 1990:142)  
 pig go.INF in  
 ‘A pig goes in.’  
 (Claire 1;11)
- b. Dammi! (Salustri and Hyams 2003:694)  
 give.IMP to me!  
 ‘Give it to me!’  
 (Diana 1;10)
- c. Tuto seli. (Varlokosta et al. 1998:195)  
 this want.IMPERF.3SG  
 ‘I want this.’  
 (Spiros 1;9)

The imperative is a plausible candidate to RI in Italian because it shares essential properties of RIs. Imperatives are irrealis, they are restricted to eventive predicates, and they are tenseless (Salustri and Hyams 2003). In English bare verb forms and in Greek participle forms are both used in more by children contexts than by adults in the target grammars (Radford 1990; Varlokosta, Vainikka and Rohrbacher 1998).

Grinstead (1998) notes that the Catalan and Spanish third person singular indicative is a default form that can be considered the equivalent of RIs in null subject languages. We will return to this proposal in more detail later, in comparison with the Finnish data. So, a default or other unmarked form would realize the RI stage in some languages where infinitive verb form is not possible or, for some other reason (Liceras, Bel and Perales 2006).

Davidson and Legendre (2003) also proposes that the third person singular indicative is the equivalent of RIs for Catalan children, since they use it in first person singular contexts. In addition, they conclude that these are agreement errors, since children correctly produce first person agreement simultaneously with third person singular verb forms, which are used in first person singular context. They claim that if children use their own name as a subject, it is reference error.

It has been claimed that RIs are not a universal phenomenon in child language acquisition (Salustri and Hyams 2003). In child speech, the frequency of Root

Infinitives differs. The duration of the RI stage also varies across languages and across individual children (Guasti 1993; Rizzi 1993; Phillips 1995; Hoekstra and Hyams 1998; Lasser 2002). Children use RIs and utterances with a finite verb side by side (Wexler 1998; Lasser 2002). According to Guasti (1993), in the RI stage, finite verb forms are not productively used, but when the context requires an infinitive verb form, children do not use the finite verb there. The amount of RIs decreases over time until it reaches adult level (Lasser 2002). We now turn to some analyses that have been proposed to account for the existence of children's RIs.

### **3.3.2 Analyses**

The distribution of the RI phenomenon has been the subject of much debate, as well as the underlying structure of RIs. Among the properties most widely discussed, are the distributional regularities and syntactic co-occurrence dependencies, and temporal and aspectual interpretations of children's root clauses (Poeppel and Wexler 1993; Guasti 1993; Haegeman 1995; Ingram and Thompson 1996; Lasser 2002; Torrence and Hyams 2004; Hyams 2012). Different ways to account for Root Infinitives have been forwarded. Some of the analyses are semantic by nature, and some are more syntactic.

#### ***3.3.2.1 Semantic analyses***

Various studies have shown that many RIs in languages such as Dutch, German and French tend to be eventive predicates while statives are typically finite (Ingram and Thompson 1996; Hoekstra and Hyams 1998; Blom 2007).

Lasser (2002) proposes that children lack language-specific knowledge to mark finiteness that involves the meaning of the entire sentence. He suggests that children sometimes think that the non-finite verb form is the neutral verb form during the RI stage. Finiteness information can be filled from context. Children have not yet acquired functions of morphemes, auxiliaries, and modals in the context of a request, even if they have acquired at least some of them during the RI stage (Lasser 2002). These differences are highly sensitive to social conventions and are not associated the lexical semantics of modals, auxiliaries, and finite morphemes. Children produce RIs because

they do not know when finiteness needs to be specified and when it can be left out in the language they are acquiring (Lasser 2002).

Boser et. al. (1992) proposed that RIs are finite root CPs, where a non-overt finite auxiliary occurs in  $C^0$ . This is called the null auxiliary hypothesis, and it states that RIs always have a null element in  $I^0$  or  $C^0$ , which can be either a modal, or a semantically null auxiliary element. Josefsson (2002) also argues that in Swedish, children seem to use non-finite root clauses when adults have an auxiliary and non-finite verb construction. She claims that non-finite root clauses in child language contain a null auxiliary, which can be the temporal auxiliary or a modal. RIs occur in contexts where performative/creative speech acts take place or in speech acts containing a request or a directive. Since an evaluation can be done by direct observation, tense features may consequently be left unspecified (Josefsson 2002).

Gavruseva (2003) argues that the verb's inherent lexical aspect, and the specifications of the syntactic aspectual heads determine finiteness in child language. She suggests that the verb's inherent aspect is bound to the acquisition of finiteness. According to Gavruseva (2003), aspect is a member of a tense chain, and this gives the temporal interpretation of the clause. In RIs aspect is underspecified, and a tense chain cannot be formed (Gavruseva 2003).

Hoekstra and Hyams (1998) observe that finite verbs express present tense interpretations in most cases, and RIs have the modal reference. Stative verbs are always finite. They propose that this interpretation of RIs comes from the infinitival morpheme itself. Hoekstra and Hyams (1998) note that child grammar depends more than adults on discourse-related mechanisms that anchor syntactic chains temporally. According to Hoekstra and Hyams (1998), RIs are restricted to predicates that denote events, and this is referred to as the Eventivity Constraint (EC). They also argue that RIs usually get a modal interpretation, and they call this Modal Reference Effect (MRE). By contrast, children's early finite sentences have predicates that denote state (Jordens 1990; Wijnen 1997).

From this perspective, in the English, RIs are bare verb structures lacking an infinitival morpheme in English; hence there is no modality, and thus both stative and eventive predicates are possible (Hyams 2002). Modal meanings seem to be specific to RIs, because a present-tense interpretation dominates in children's simple finite sentences. This holds for Germanic languages but not for English. Blom (2007)

assumes that Dutch has a strong inflection feature, and this restricts RIs to untensed interpretation in Dutch child language. In contrast, English has a weak inflection, and, based on this, RIs include tensed and untensed sentences in child English (Blom 2007).

Hyams (2007) proposes that when a tense specification is absent, the temporal meaning of a sentence is given by its aspectual properties. She calls this the aspectual anchoring hypothesis (AAH). The hypothesis is based on general principles of aspectual interpretation in interaction with specific lexical and grammatical aspectual properties of the target languages. These general principles operate in combination with language-specific aspectual properties to derive the different interpretations associated with non-finite root clauses across several typologically diverse child languages (Hyams 2007; Hyams 2012). The AAH requires that non-finite clauses (and children's RIs) are anchored to utterance time to get a temporal interpretation (Hyams 2012).

According to Hyams (2012), in English, children's bare verb structures can be formed with two routes by direct anchoring to an event or anchoring through null modal. In English, null modal is *do* because 'true' English modals are inherently tensed. English also lacks EC (Eventivity Constraint) because English statives do not have the event variable to anchor non-finite clauses. Nevertheless, English modals require finiteness, and hence English bare verbs are not associated with modal meaning. The only non-finite modal-like element is null *do*. Null *do* is aspectually neutral and compatible with both eventive and stative predicates. See also, Ortifelli and Hyams (2012) who show that English children comprehend imperatives as finite clauses before the age of 3;6.

In this section I have presented semantic analyses for children's RIs. These analyses explain RIs in German, Dutch and Scandinavian languages, but have problems for explaining bare verb forms in English. Hyams (2012) have tried to explain English RIs with lacking Eventivity Constraint and null modal *do*. It is not clear how a semantic analysis would explain the other alternative RI types, such as the third person singular form in Spanish (or Finnish).

In Finnish, one possibility for RI verb form is an infinitive verb form. Recall, that Finnish has many infinitive verb forms, and child language data has two, the A-infinitive and the MA-infinitive. Another option for the Finnish RI verb form could be an imperative, as suggested for Italian by Salustri and Hyams (2003). The third option could be third person singular, as Grinstead (1998) proposes for Spanish and Davidson



and Legendre (2003) for Catalan. The Finnish Root Infinitive verb form proves to be third person singular (see section 6.2). This construction is not modal. Thus, semantics of Finnish Root Infinitive is not discussed in this thesis. Root Infinitives seem to be optional in child language, since children produce finite utterances with the correct finite verb at the same stage they use an infinitive verb form in finite context. See more discussion of optionality from Wexler (1998) and Legendre et al. (2002).

### **3.3.2.2 Syntactic analyses**

The syntactic analyses of the RI phenomenon are based on the idea that RI constructions have less structure than the full finite clauses.

According to Rizzi's (1993) theory of truncation, children may truncate the structure of the clause at any node below the CP layer, resulting utterances in which one or more functional categories are missing. RIs are formed with a reduced tree (VP). This option is banned in the adult system under normal circumstances, but it is available for children. A universal principle specifies that root clauses are always CPs, but children do not yet have access to this knowledge. Rizzi proposes that this principle matures over the time when the child is acquiring language. The structural hierarchy determines truncation: all the projections that are above truncated projection are missing (Rizzi 1993). So, the child's grammar has in principle the full clausal structure available to it but it is sometimes truncated.

Rizzi (2005) assumes that the clausal structure begins from the Force projection, continues with the projection of the left periphery (FocusP and TopP) and then FinP and TP. He argues that some of these projections are obligatory (Force, Tense, etc.), and other projections are optional and are only present if the clause has the content that should be expressed (Top, Neg, etc.). In Rizzi's proposal, languages differ in which categories can be taken as the root, and based on this, the truncation is parameterized. Force can always function as the root, but other categories (TopP, NegP, etc.) are options that some languages may choose. Then, the categories may be omitted, but the hierarchy should be followed from the first expressed element downward. In topic drop languages, TopP can be the root category, and, in subject drop languages, the root can

be the higher projection of the inflectional system, hosting the subject in its Spec (Rizzi 2005).

Guasti (1993) claims that finite and non-finite sentences have the same tense value in child language since children may disregard the various referential properties of the tense system, and this results in RIs. She suggests that children have RIs because they sometimes fail to produce functional categories. The functional categories are optional because children have not yet mastered the referential system associated with functional categories. This is in accordance with the proposal of Radford (1990) that children's early grammars lack functional projections.

Wexler (1994) proposes that children are not sensitive to tense values in the RI stage. Schütze and Wexler (1996) assume that in children's RIs, tense and agreement can be independently underspecified. Children can omit either tense or agreement in finite environments. Nominative subjects must occur in utterances with agreement but without tense, while utterances with tense but without agreement cannot assign nominative case to the subject. Schütze and Wexler (1996) claim that here the subject takes the default case. Subject takes genitive case if tense or agreement is not present. Subject omission is only possible if tense is unspecified or missing (Schütze and Wexler 1996). This analysis has been called Agreement Tense Omission Model (ATOM).

Similarly, to the model of Schütze and Wexler (1996), Blom, Krikhaar and Wijnen (2001) propose that RIs in Dutch and English have unspecified values for tense, mood and aspect. These forms are used if the child does not have an appropriate, specified form available. According to Blom, Krikhaar and Wijnen (2001), children use this form very early when they have not yet acquired specific forms, and they only have few forms that express a wide range of different meanings.

Ledengre et al. (2002) proposes that children have Economy of Structure constraints. They assume that children can have utterances that lack all the functional projections, or they can have one functional projection that has either tense or agreement, and in the end, they can have functional projections for both; tense and agreement. Further, Legendre et al. (2002) propose that children have two faithfulness constraints that are Parse tense and Parse agreement. Any non-tensed form violates Parse tense and any non-agreeing form Parse agreement. The faithfulness constraints can float over a certain range in the ranking during development. A different structure wins under each of the rankings.

Varlokosta, Vainikka and Rohrbacher (1998) suggest that in Greek participle verb form corresponds RIs because children overuse this form. Greek does not have an infinitive verb form, so RIs in Greek cannot be formed with infinitive. The frequency of the participle in early language and its decrease at later stages is comparable to the pattern of RIs observed in other languages. In addition, participle verb form rarely occurs with an overt subject, but subjects are used with finite verbs, and this is another argument for treating the participle as an early nonfinite form comparable to the RI in other languages (Varlokosta, Vainikka and Rohrbacher 1998). These authors claim that all children will go through the RI stage, but that verb form of the RIs depends on the target language. According to them, the RIs are formed from the least marked verbal form in the language, the one that involves the least structure. For more discussion of the Greek RI construction, see Hyams (2002).

Schaeffer and Ben Shalom (2004) argue that child Hebrew has RIs, but this phenomenon is restricted to children who are under the age of two. Since Hebrew marks its verbs for more than number, this is counterevidence against Hoekstra and Hyams's (1998) hypothesis that only languages, that mark number exhibit RIs. Schaeffer and Ben Shalom (2004) suggest that this is due to the fact that number has no deictic syntactic properties, but tense and person do. According to Schaeffer and Ben Shalom (2004), deixis is part of pragmatics, and the most transparent bridges between syntax and pragmatics is represented by tense and person morphology. They suggest that acquiring these bridges helps the child to realize that finiteness is obligatory, and this obligatory finiteness anchors the event in the discourse. If a language has overt tense and person morphology, the connection between syntax and pragmatics is salient, and this helps early acquisition of obligatory finiteness. In languages where this connection is not so clear, acquisition of obligatory finiteness is delayed, and RI stage is longer (Schaeffer and Ben Shalom 2004).

Grinstead (1998) argues that the third person singular form could be RI for child Spanish and Catalan. He proposes that utterances have no specification of subject features, so they occur with null subjects (PRO), and the verb is in the third person singular (example 43). According to Grinstead, this form is actually a non-finite verb form for the child. A third person singular verb form is also the most frequent verb form in children's input.

- (43) a. *Si quiere.* (Spanish, Grinstead 1998:85)

emph. want.3SG

(Graciela responds to the investigator asking her if she wants some cards he is offering her.)

- b. *No pot.* (Catalan, Grinstead 1998:84)

not can.3SG

(Guillem is standing on his tiptoes holding on to the door knob trying to open the door.)

Davidson and Legendre (2003) also claims that Catalan children use the third person singular present tense form as equivalent to RI. In addition, Davidson and Legendre (2003) propose an optimality-theoretic analysis with partial constraint ranking, which can explain how varying proportions of tensed, agreeing, and default utterances arise. The analysis demonstrates how a child progresses from stage to stage until s/he has fully acquired tense and agreement.

In chapter 6, I will discuss the third person singular verb form in child Finnish, which may be the equivalent of the RI in Finnish child language, similarly to Grinstead's analysis (1998).

### **3.4 Functional categories in child language**

A typical two-year-old is missing a lot from his speech. Children do not omit elements randomly, since they have strict rules on what elements can be ignored and where they can be omitted. One important question is how much of the basic clausal representation of the adult grammar children possess and at what stage. The adult grammar consists of several functional projections that may or may not be present in a child's grammar at various stages.

The role of functional categories has been the subject of long debate in the study of child language because they have presented one possibility for explaining why children's grammar differs from adults' grammar, such as trying to explain the existence of RIs and other, overgeneralized verb forms. Functional categories code the information of the clause type, tense, agreement, and other inflectional morphology.

They differ from lexical categories, which only code lexical words with semantic content, e.g., verbs, nouns and adjectives.

In the previous literature, it has been claimed that children lack functional categories altogether (cf. Radford 1990, Platzack 1990), or that they have some functional categories but not others (cf. Clahsen 1990), or that children's functional categories do not have all the same properties that adult functional categories do (Schütze and Wexler 1996; Rizzi 1993). These studies should explain how functional categories are acquired and when. They are examples of the Weak Continuity and the Structure Building hypotheses. The Weak Continuity hypothesis argues that children do not have adult linguistic competence from the beginning of language acquisition. Under this view the full inventory of functional categories in adult grammar is absent in early child grammar, and this explains why children's grammar differs from adults' (Clahsen, 1990; Clahsen, Penke, and Parodi, 1993). In the Structure Building hypothesis, children build the tree gradually one projection at a time (e.g. Clahsen 1990).

Poeppel and Wexler (1993), finally, argue that children have all the functional categories as adults at the age of 2;0. Poeppel and Wexler's view, called the Full Competence Hypothesis (also equivalent to the Strong Continuity Hypothesis), can be thought of as the standard approach to children's functional projections. The Full Competence Hypothesis should provide something else towards explaining why children do not speak like adults and why their language development still seems to occur in several stages.

From chapter 2 we can recall that the basic skeleton of adult Finnish is constituted by several functional projections that include ForceP, FinP and TP. Force tells whether the clause is a declarative or imperative clause. Other elements that are placed in functional categories, such as ForceP, are *wh*-word, relative pronouns and complementizers. In addition, question particles and discourse particles occur in functional categories. FinP contains subject-verb agreement and TP tense.

### **3.4.1 Functional projections develop over time**

Based on English child acquisition data, Radford (1990) proposes that children only have lexical projections before age of 2;6 and they do not possess any functional projections, predicting that all verbal forms produced are non-finite. In this proposal

the functional categories are subject to maturation.<sup>24</sup> He observed, for example, that when English children use verb forms to mark person agreement, they do not use *-s* in third person singular forms, example (44).

- (44) a. Pig go in. (Radford 1990:142)  
(Claire 1;11)  
b. Mummy put it away. (Radford 1990:142)  
(Jem 1;11)

Due to the lack of functional projection, Radford's theory predicts that child language should not exhibit verb movement or subject-verb agreement. This is because children do not have the position where the verb could move, and the projection that could license agreement is not present. In this view, the child begins with a simple verb phrase, which explains why verbs may appear in non-inflected forms during the early stages of language acquisition.

Radford's hypothesis has been questioned, since German child language makes a clear distinction between finite verbs and non-finite (or infinite) verb forms from a very early stage (Clahsen 1990; Clahsen, Penke and Parodi 1993; Poeppel and Wexler 1993). Studies about functional categories have shown that languages can differ for what functional categories occur in child language, for example Grinstead (2000) proposes that in Spanish and Catalan children have agreement but no tense or number, and, according to Ingham (1998), children in English use tense but not agreement. Further, Legendre et al. (2002) suggest that French children begin with tense and later when agreement emerges, tense and agreement compete for one functional projection.

Clahsen (1990) observes that young German speakers' place dominantly verbal elements with the suffix *-t* and modals in the verb-second position (45a), whereas infinitives and verbs with other inflections predominantly occur sentence-finally (45b). This suggests that even in the early phases of German acquisition the grammar has two positions for verbal elements (Clahsen 1990), indicating the presence of at least some functional projections above VP.

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<sup>24</sup> We now know that functional projections do not mature at once as Radford (1990) originally proposed. As we will see in the Finnish data, functional projections emerge over time, see chapter 6.

(45) a. Hier kann nicht raus. (Clahsen 1990:375)

here can not out

(Mathias 2;8)

b. Ich schaufel haben. (Clahsen 1990:375)

I shovel have

(D. has the shovel in his hand)

(Daniel 2;10)

In the previous section, 3.3, it is argued that children can distinguish finite verbs from non-finite ones (example 41 repeated here as example 46), since they place them in different positions. Furthermore, the choice of the position is not random, as examples (45) and (46) show.

(46) a. Die Hose anzieh. (Clahsen, Penke and Parodi 1993:410)

the trouser put.INF

‘To put the trouser on.’

(Hannah 2;6)

b. Auto fahren. (Clahsen, Penke and Parodi 1993:411)

car drive.INF

‘To drive a car.’

(Sabrina 1;11)

c. Da hängt das (Clahsen, Penke and Parodi 1993:411)

there hang.1SG it

‘It hangs there’

(Sabrina 1;11)

d. Gosse nimm du. (Clahsen, Penke and Parodi 1993:411–412)

big take.1SG you

‘You take the big (pencil)’

(Sabrina 1;11)

As can be seen from examples (45) and (46), finite verbs are in second position of the clause and infinitive (or verbs forms that children use like infinitives, and which do

not have clear agreement markers) are in clause-final position. Based on this, Clahsen, Penke and Parodi (1993) propose that children have a single functional projection for finite verbs at the early stage. Children can move the verb when it is needed. These word order facts in the RI stage show that the child must have a functional projection for the subject to move to (Wexler 1998).

Clahsen (1990) and Clahsen, Penke and Parodi (1993) argue that children have one functional projection above VP. They propose that this projection has a landing position for finite verbs, and only finite verbs can occur in the head position of this projection. The projection is called F(inite)P. In addition, they claim that children's lexicon contains elements that are categorized as finite in the early stage of German language acquisition, and the head of this projection is the host of the syntactic feature of finiteness. Clahsen (1990) notes that this projection cannot be identified with IP or AgrP because its specifier position is not restricted to the subject. According to Clahsen (1990), the projection cannot be CP either, because lexical complementizers, or *wh*-elements are not present in early child language. Clahsen (1990) argues that, when children have acquired verb-subject agreement, FP is specified as a CP in this stage of language acquisition. He proposes that this is because children acquire the identification of complementizers. Additionally, the categorization of finite verbs has changed because of the acquisition of verb-subject agreement.

Since modals in German child language always appear in a finite, and they exhibit full agreement inflection, they can show us that children have one functional projection. This is borne out, as can be seen from example (47). In addition, nearly all modal verbs appear in the first or second position of the clause at an early stage. This indicates that German children have a position for finite verbs even in early stage of language acquisition, so children have at least one functional projection at this stage. Example (47d) shows that children can combine a non-finite verbal element with a modal-verb at an early stage.

- (47) a. Blöde mag nich. (Clahsen, Penke and Parodi 1993:413)  
           stupid want.1/3SG not  
           'The stupid one does not want (it).'  
           (Inga 2;4:1)



- b. Müssen alle rein (Clahsen, Penke and Parodi 1993:414)  
 must.3PL all into  
 ‘(They) all must (go) in.’  
 (Sabrina 2;0-2;2)
- c. Das möchten die gern. (Clahsen, Penke and Parodi 1993:414)  
 that want.3PL they really  
 ‘They want to have that.’  
 (Hannah 2;6)
- d. Darf nicht esse. (Clahsen, Penke and Parodi 1993:415)  
 may.1/3SG not eat.INF  
 ‘(The cat) is not allowed to eat.’  
 (Inga 2;4:1)

In German, negation can be placed in pre- or postverbal positions depending on the type of verb. If German children have a functional projection for finite verbs, they should be able to place preverbal negation before non-finite verbs and postverbal negation after finite verbs. Clahsen, Penke and Parodi’s (1993) data show that this prediction is supported (example 48).

- (48) a. Das geht nicht. (Clahsen, Penke and Parodi 1993:416)  
 it go.3SG not  
 ‘It does not work’  
 (Simone 1;8–2;0)
- b. Nicht mehr dreckig machen. (Clahsen, Penke and Parodi 1993:417)  
 not more dirty make.INF  
 ‘Don’t make that dirty again.’  
 (Hannah 2;6)

The position of negation in German child language gives additional support to the idea of one functional projection in early language. Clahsen, Penke and Parodi’s (1993) data has only a few instances where the children place negation before the finite verb.

Thus, Clahsen, Penke and Parodi argue that German child language has only one functional projection above VP.

Similarly, Guasti (1993) claims that early Italian verbs cannot be viewed as a pure instantiation of the lexical category since they are always accompanied by agreement morphemes, and the choice of these morphemes is not arbitrary. Guasti (1993) assumes that a functional category containing the verbal inflection is present in child grammar from the beginning. Further, Ingham (1998) claims that English-speaking children have a stage in their grammatical development when they use tense but not agreement.<sup>25</sup> In addition, Legendre et al. (2002) suggest that French children begin with tense, but they do not have agreement in their early language. They have concluded that French children have one functional projection from early on. When agreement emerges to children's language, utterances with tense are decreasing. According to Legendre et al. (2002), tense and agreement are competing for this one functional projection at this stage.

So, all these studies suggest that children have one functional projection in their early language, and in several languages this projection appears to be present from the beginning of language acquisition.

The most recent work on using structure building approach to the first language acquisition can be found by Vainikka and Young-Scholten (2011, 2013). Vainikka and Young-Scholten (2011: chapter three) propose Organic Grammar to explain children's language development. In this theory, the child begins with bare VP-structure and will develop the tree in one structure at a time; a reanalysis of the first language German data is provided. This theory differs from Radford's (1990) proposal, since he assumes that all the functional projections emerge at once, not gradually. When the child has acquired all of these structures, the child's grammar can be said to represent the full adult structure. Each acquired functional projection remains unchanged in the tree when the next piece is added. Based on this, the child's acquisition process and the final tree has a straightforward connection. Thus, the children will acquire complex constructions in the same order.

We now turn to the alternative approach called the Full Competence Hypothesis.

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<sup>25</sup> However, note that it is not clear whether Ingham's stage is earliest stage of acquisition of English.

### 3.4.2 All the adult functional projections always exist

Rather than assuming that children do not have adult grammatical competence, the traditional view argues that children have all the same grammatical categories that the adults have. Several researchers have proposed that children have all the same clausal functional projections VP-TP-CP that adults have at the earliest stage of syntactic development (Boser et. al 1992; Poeppel and Wexler 1993; Hoekstra and Hyams 1998). This hypothesis is known as the Full Competence Hypothesis, or the Strong Continuity Hypothesis. The idea that the child's grammar generates a complete phrase-structure tree in the earliest stage of syntactic development does not create any learnability problem, whereas under other approaches, one should explain how the missing projections are acquired (Clahsen, Penke and Parodi 1993). While the Full Competence hypothesis should explain, why children make errors (e.g. RIs, null subjects) in their early speech. The Strong Continuity Hypothesis states that children have adult competence from the initial state. Children have access to grammars defined by Universal Grammar, and this guides language acquisition (Lust 1999; 2006).

Poeppel and Wexler (1993) show that German children do not use the agreement morphology on the verb randomly distributed among subjects, and this supports the idea that children know agreement morphology. In their analysis, the first and third person singular subject always co-occur with the correct agreement form on the verb. Second person singular subjects are rare in the early child data. The agreement morphology is phonologically deficient but not unambiguously wrong.

All agreement errors in German child speech occur with plural subjects, and there are only a few of them in the data. Thus, Poeppel and Wexler (1993) assume that the children have the singular agreement system in place early on. Because their data have only few plural subjects, it is difficult to say anything definitive about plural agreement system. The major exception is that the German children use non-finite verb forms in their early language in contexts where adult grammar does not allow them. Due to the low number of agreement errors and that the children do not use agreement endings randomly, Poeppel and Wexler conclude that the children know agreement morphology although the agreement paradigm is not fully available to the child. According to Poeppel and Wexler (1993), this supports the Full Competence Hypothesis.

In contrast to Clahsen (1990) and Clahsen, Penke and Parodi (1993), Poeppel and Wexler (1993) assume that the ability of children to distinguish finite verbs from non-finite verbs would support the existence of head movement. If the child has the head movement from V to T, and from T to C, they must have two functional projections (Poeppel and Wexler 1993). They show that head movement as a morphosyntactic process is in place in the early grammar. In their data, finite and infinitive verb forms are in correct positions. Poeppel and Wexler (1993) do not discover any semantic similarities with verbs that are only in finite form and infinite forms. This conclusion is in contrast with the interpretation of Clahsen (1990) and Clahsen, Penke and Parodi (1993).

Poeppel and Wexler (1993) further show that the German child places the verb in the second position of a finite clause, which they attribute to the existence of the CP system. The evidence for this claim comes mainly from the data that show how one child (Andreas) uses first position in a finite sentence for constituents other than the subjects, example (49). This follows the adult German pattern. Thus, word-order data from child German suggests the existence of two functional projections in child language; agreement<sup>26</sup> and CP (Poeppel and Wexler 1993).

- (49) a. Kahehabahn    fahr    ich. (Poeppel and Wexler 1993:14)  
           (toy race car)    drive    I  
           (Andreas 2;1)
- b. Da    bin    ich.  
           There am    I  
           (Andreas 2;1)

The children's use of RIs is problematic for the Full Competence Hypothesis because they are ungrammatical in adult language (Poeppel and Wexler 1993). Wexler (1994) suggests that children do not have the tense distinction in their RI stage, so that an infinitive can be used for the description of an on-going event. Further, Schütze and Wexler (1996) assume that tense and agreement can be underspecified in children's

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<sup>26</sup> Poeppel and Wexler (1993) use IP-level, which hosts both agreement and tense, but they do not say anything about tense.

root clauses. Under this analysis, either tense or agreement may be independently missing in finite environments during the RI stage. Schütze and Wexler's (1996) analysis has been called Agreement Tense Omission Model (ATOM). In addition, Wexler (1998) proposes that learners produce RIs because they do not yet have access to the knowledge that both the tense and agreement phrases contain D-feature that have to be checked. According to these authors, all the functional projections do not function quite identically with respect to the adult grammar, even though they are present from an early stage of language acquisition.

In this section I have presented two views on functional projections in child language. The Weak Continuity approach assumes that children's functional projections emerge gradually (also called the Structure Building hypothesis). Recall that under this approach comes the problem of how the grammar develops. However, the data from early first language acquisition of German and French are problematic with respect to the claim that children have an early stage without any functional projections.

Furthermore, the Full Competence Hypothesis, or the Strong Continuity approach assumes that children have the same clause structure as adults. Under this approach, it should be explained why children's language differs from adults' language. Recently in support of the Strong Continuity approach, Brandt-Kobe and Hoehle (2010) show that 3-year-old German children are able to match sentences solely based on the agreement suffix on the verb, using comprehension data from an eye-tracking study. Comparable preferential looking data and pointing data from French children is reported in Legendre et al. (2010).<sup>27</sup> Nonetheless, the data from the study by Ortifelli and Hyams (2008) is problematic for any theory that claims that children have the same grammar as adults. Nevertheless, the question of whether children have adult syntax from the beginning of acquisition has not been resolved.

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<sup>27</sup> Note also that the children in the study are 2;6 years, and it is agreement data only, since French children begin with tense projection according to Legendre et al. (2002).

## 4 EARLIER STUDIES IN FINNISH LANGUAGE ACQUISITION

### 4.1 Introduction

In this chapter I will present earlier studies in Finnish language acquisition. Many of the studies of Finnish language acquisition concentrate on the acquisition of Finnish morphology. The acquisition of Finnish syntax is less researched. All studies focused on the acquisition of Finnish syntax are summarized here.

### 4.2 The Bowerman's study

Bowerman's (1973) cross-linguistic study presents the earliest period of the acquisition of grammatical structure. This study had two Finnish speaking children who were living in the Boston area at the time study was done. This was the first study to investigate the emergence of syntactic structures used by Finnish-speaking children. Bowerman described transformational rules the children used when combining words in utterances of their grammar. She introduced two stages of language acquisition (early stage I and late stage I), which were defined by mean length of utterance (MLU). For Seppo, the early stage I the MLU was 1.42 and for late stage I 1.8. Rina's late stage I the MLU was 1.83. The stages were originally from Brown (1973). Bowerman began data collection at this stage, since Brown's first stage MLU was an average of above one morpheme. In late stage I, the MLU was an average above two morphemes.

When the study began, Seppo was 1;10 and Rina 2;0 years of age. The data were collected by recording the children once a week in each child's home; one recording lasted half an hour. The children played and interacted with their mothers. Rina was recorded for about 8 months and Seppo for almost two years. Since Rina's data collection began later than Seppo's, Rina was already in late stage I, and she did not have data from early stage I.

In early stage I, Seppo's MLU was 1.42. He produced nouns, verbs, adjectives, and a prolocative *tuossa* 'there' in isolation, as well as constructions with the syntactic interpretations subject-verb, verb-object, subject-verb-object, noun-locative, and

modifier-noun. Bowerman analyzed that nouns had the features animate or inanimate, and inanimate nouns were further subdivided into vehicle and non-vehicle. Animate and vehicle nouns preceded verbs and other nouns. Inanimate nouns followed verbs and other nouns. The prolocative *tuossa* ‘there’ combined most of the times with nouns, and it occurred before or after the noun. Seppo had subject-object strings without verbs. Some verbs never took objects, but objects were optional with some verbs. Examples in (50) show some of Seppo’s utterances at early stage I (Bowerman 1973:50).

- (50) a. *tuossa kenkä*  
           ‘there shoe’  
       b. *kissa pois*  
           ‘cat (goes) away’  
       c. *ajaa bmbm*  
           ‘drives “car”’.

At early stage I, Seppo used most of the time basic Finnish word order SVO. Seppo did not have embedded sentences at this stage. In addition, inflections, pronouns, copulas, modal-type verbs, questions, and negative constructions were missing in Seppo’s speech. With verbs, Seppo used the third person singular, present indicative verb form in his speech the most times, as in example (50c), and nouns were in the nominative singular form (bare form). Noun-modifier constructions never appeared in a syntactic context as sentence-subjects or direct objects in Seppo’s speech. Thus, all of Seppo’s subjects and objects were simple nouns. Seppo used the negation word *ei* ‘no’ in isolation, and he did not combine it with other words. Therefore, he did not use it like an auxiliary as in the adult language. Seppo’s speech also lacked questions (both wh, and yes/no questions) at this stage.

In late stage I, Seppo’s MLU was 1.81 and Rina’s 1.83. The children used two- and three-word constructions most of the time. Subject nouns were mostly animate, and object nouns were inanimate; no personal pronouns were used at this stage. Seppo did use modifier-noun strings as subjects or objects, but Rina’s subjects were simple nouns, and her direct objects were nouns, pronouns, and in some instances, modified nouns. The nominative singular form of nouns was used in all syntactic roles. Some pronouns occurred in the partitive case as direct objects (e.g. *tätä* ‘this.PAR’, *sitä* ‘it.PAR’, *näitä*

‘these.PAR’ and *lisää* ‘more.PAR’). Accusative and genitive cases were missing from the children’s speech at this stage. Prolocatives had case markings (e.g. *tuossa* ‘there’, in inessive case), but these forms were probably learned as units. Most of the verbs were in the third person singular present indicative form. In imperative context, the third person singular present tense verb form was used most of the time. The children did not mark verbs with imperative, even when the context would have required it. Subjects were sometimes omitted. Example (51) shows some utterances from Seppo (Bowerman 1973:60) and Rina in late stage I (Bowerman 1973:63–64).

- (51) a. *äiti avaa* (Seppo)  
       ‘mother opens’  
       b. *possu ajaa pyörä* (Seppo)  
       ‘piggie drives bicycle’  
       c. *hillo siinä* (Seppo)  
       ‘jam there’  
       d. *Rina istuu* (Rina)  
       ‘Rina sits’  
       e. *iso kynä* (Rina)  
       ‘big pen’  
       f. *tässä juna* (Rina)  
       ‘here (is) train’

Late stage I had some evidence for making a distinction between main verb and copula, but only Rina occasionally used the copula *on* ‘is’. The copula verb was missing from most of the copular sentences while the copula is obligatory in adult Finnish. The children formed negation with a negative marker (*enää* ‘any more’ for Seppo and *ei* ‘no’ for Rina) and combined it with one other element, like a noun or a verb. The children had only one wh-word (*missä* ‘where’) for questions. The questions were formed the same way as negation, i.e. combining wh-word with a noun or a verb. The children did not ask yes/no questions at this stage. The children did not have sentence embedding or conjoining. Data collection ended much before the children had developed the target grammar.



Bowerman's study applied generativist linguistic theory, and she compared three languages (English, Finnish and Samoan). Bowerman attempted to discover possible universals for language acquisition. She noticed that children's utterances were very similar in all languages studied.

While Seppo and Rina's data represent very early stages of language acquisition, they are consistent with data from other languages discussed in the previous chapter in that third person subjects are often omitted (unlike adult), and a single verb form, the third person singular, is most commonly used regardless of context, perhaps corresponding to Root Infinitive in the Finnish child language.

### 4.3 The Toivainen's study

Toivainen (1980) has done cross-sectional study that had 25 children between 1;0 and 4;4 years of age. The study investigates the order of acquisition of Finnish inflectional morphemes, which include the verb and the nominal affixes. The verbal affixes are the markers of mood, tense and the person, and the nominal affixes are case endings and plural markers.

Table 1 summarizes Toivainen's results where ages are medians that he used in his study. In Toivainen's study, the first verb forms were imperative in form and function, which was in contradiction to Bowerman's findings, and indicative verb forms in the third person singular followed soon afterwards.<sup>28</sup> After that, came the negative construction, and then the past tense form emerged. These were followed by the first person singular, the first person plural (or passive form) and the second person singular. The perfect appeared at age 2;4. The children produced conditional verb forms at age 2;10.

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<sup>28</sup> The children used different verb stems in imperatives and in third person singulars. The first imperative forms were restricted to two verbs: either *anna* 'give.IMP' or *katso* 'look.IMP'.

**Table 1.** Summary of Toivainen's results across 25 children

AGE	Verb forms	Noun forms
< 1;10	3 <sup>rd</sup> person singular; imperative	
1;10	Negation	Partitive
1;11	Past tense	Genitive
2;0		Local cases
2;1		Plural infix <i>-i</i>
2;2	1 <sup>st</sup> person singular; 1 <sup>st</sup> plural passive; MA-infinitive	Accusative
2;4	perfect; A-infinitive	Plural suffix <i>-t</i>
2;7	2 <sup>nd</sup> person singular	
2;10	Conditional	
3;0		essive; transitive

The first acquired noun case was the partitive case followed by the genitive, which was ‘real’ genitive and not a form of the accusative (see more about Finnish genitive in section 2.6). After the partitive and genitive, the accusative singular emerged as an object case. Local cases appeared around age two in Toivainen’s study. The plural infix *-i* was established at age 2;1 and the suffix *-t* at age 2;4. The first infinitive structure in Toivainen’s study was MA-infinitive at age 2;2. The A-infinitive became common at age 2;4.

Toivainen (1980) claimed that, in the first stage of language acquisition, children used an unmarked basic verb form, which was the third person singular of the present tense in Finnish. This verb form is, semantically, the most neutral one in Finnish. Commands have an imperative clause feature that becomes apparent from the context, and they do not need to be interpreted as basic forms such as third person singular. The basic form of a noun was either the nominative or partitive. In the next stage, first person singular and past tense suffixes emerged in the children’s speech. In the third stage, the first person plural emerged. In the last stage, other personal verb forms appeared.

In Bowerman’s study, the children only used the nominative case for all nouns, and they lacked other case forms. Most of the verbs were present tense third person singulars in Bowerman’s study. The differences between Toivainen’s and Bowerman’s results could be explained with the fact that the children in Bowerman’s study were living in the United States and did not hear as much Finnish as Toivainen’s subjects.

Similar to the findings of Bowerman's study, the children used third person singular verb forms from very early on in Toivainen's study. The other early verb form was the imperative (see footnote 28). Thus, the other one of these verb forms could be the Root Infinitive verb form in child Finnish.

## 4.4 Further studies on inflectional endings

### 4.4.1 The Niemi and Niemi's studies

Niemi and Niemi (1985, 1987) have done a longitudinal case study whose focus is on the acquisition of Finnish inflectional endings and on the analysis of the potential base forms in verbs and nominals of Finnish. The data were collected from one boy between 1;5 and 5;6 years of age with diary method, and it contained about 2500 entries. The study examined the inflectional errors of verbs and nominals the child produced in his speech. Most of the errors dealt with confusion between stem types of closely related inflectional paradigms. Thus, in these errors, the child used incorrect stems for the words. When inflection merged to the incorrect stem, it resulted in incorrectly inflected words. In nominals, the most difficult case was the partitive, and other common error points were the nominative and genitive plural. Nominatives with oblique stems gave errors when the child used adult stems as incorrect nominative forms (at the age of 2;0: *tiile* for *tiili*, 'brick'). In addition, confusion of stems of related inflectional paradigms was the most frequent error.<sup>29</sup> Most of the errors in nominal and verb inflections emerged before the age of three, but errors appeared until the age of five.

Although the data of Niemi and Niemi were not quantitative, from their examples we can be seen that the child was constructing partitive (at the age of 1;6: *konea* for *konetta*, 'machine.PAR') and genitive (at the age of 1;6: *poikan* for *pojan*, 'boy.GEN') forms before the age of two. These forms could not have been learned by imitating, because the child used forms he could not have heard from his surroundings. Note that

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<sup>29</sup> In verbs, Niemi and Niemi (1987) presented the child errors in first infinitive, past tense indicative, past participle, present tense conditional, imperative, passive, and morphosyntactic errors.

these productive examples of the partitive and genitive occurred earlier than what Toivainen's data (Table 1) showed.

As far as the verb forms are concerned, this data had no information on agreement. However, some past tense forms were distinct from those of adults, so this suggests that the past tense rule is being acquired. Past tense forms emerged before the age of two (at the age of 1;6: *haukkai* for *haukkasi*, 'bite.3SG.PAST'). Past tense errors occurred in third person singular and first person plural (passive) forms. In addition, some errors in infinitive verb forms appeared before the age of two (at the age of 1;9 *puketa* for *pukea* 'to dress up'). Since the study did not present systematically organized data or results about verb forms, it was not clear what order agreement morphemes were acquired in. This research was not syntactic, so it did not show information on null subjects or functional projections. Niemi and Niemi's data was not reported systematically, since it concentrated on errors in the child's speech. Nonetheless, the data is compatible with my own.

Niemi and Niemi's study established the occurrence of certain morphological categories and inflectional strategies in the speech of Finnish children, both in nominals and in verbs. The frequency of a form explained some of the mistakes the child produced, but it cannot be an only explanation. In addition, Niemi and Niemi suggested that semantic and/or functional factors influenced the mistakes the child made in his morphology.

#### **4.4.2 The Laalo's studies**

Laalo (1997; 1998; 1999; 2011) has studied very early morphological development, and he has collected the data from his own children (daughter and son) utilizing diary method and partly by recording.<sup>30</sup> As in Toivainen's study, the very first form used with nouns in Laalo's research was the inflectionally unmarked nominative singular. Some nouns may be first used in the partitive, but often the child used only one case form for words, so they seemed to be first learned as unanalyzed wholes (Laalo, 1997, 1999, 2009). In addition, the frequency of errors was very low, since the forms were

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<sup>30</sup> The daughter's data was used in 1997 and 1998 articles, and mainly son's data was used in 1999. In 2011 data from both children were used.

memorized forms. Laalo (2009) noticed that certain words expressed with the partitive serve primary needs of children (e.g., asking for food by using partitive forms such as *leipää* ‘bread.PAR’, meaning “some bread,” and *mehua*, ‘juice.PAR’, meaning “some juice”).

The first verb forms were the imperative and the third person singular in Laalo’s study (1997; 1998). It is not clear from Laalo’s study whether the imperatives and third person singular verb forms were used in appropriate contexts or not. He only studied the form of the word, not the contexts. According to Laalo (1998), Finnish children did not use infinitive verb forms in their early speech, as in many other languages (e.g. German and French). At the age 1;6, the child began to use past tense verb forms (Laalo 1997). In the same age, the first person singular verb forms also emerged in the child’s speech (Laalo 1998). The second person singular verb forms appeared in the child’s speech at 2;0. The first person plural verb forms were used from 1;4 on but only in few verbs. Second person plural emerged at 2;1 and third person plural at 2;5. According to Laalo (1998), the children used third person singular verb form with other subjects, especially in first person singular contexts.

In Laalo’s studies, children did not inflect words productively, and often they used only one form of the word in their early speech. In this stage, most of the utterances consisted of only one morpheme, and children used word forms they had heard from the environment. Mistakes were rare, since children produced forms they had memorized from their environment. Children produced two-morpheme utterances when they began to form rules from morphological elements. Since children had formed their own rules, some errors could occur in the morphology.

## **4.5 Previous studies on CP-level constructions**

### **4.5.1 Lieko (1992)**

Lieko (1992) has studied the development of complex sentences in Finnish. The complex sentences of Finnish involve CP projection. This was a longitudinal case study where the data were collected from one girl between 1;2 and 5;0 years of age. The data included 9600 speech events, and it had 1800 complex sentences as well as 140 implicit

complex sentences. The implicit complex sentences did not have connectors, such as complementizers; they were produced between the ages of 1;9 and 2;5. The purpose of the research was to give a systematic description of the semantic and syntactic development of the complex sentences. The aim was to show what types of complex sentences the child used, what their emergence order was and why. At the beginning of language acquisition, complex sentences were missing from the child's speech, but at the end most of the complex sentences were mastered.

The first connector in Lieko's study was *kun* 'when, because', and it was productive at the age of 2;3. Sentence-initial *kun* clauses were productive at the age of 2;9. The connector *mutta* 'but' was first used in incomplete utterances, and it was productively used at the age of 3;1. The connector *jos* 'if' was also applied to incomplete utterances, and it was productive at 3;1. Example (52) shows utterances with connectors from Lieko's data.<sup>31</sup>

- (52) a. mennää ostaa huomenna ko siäl on kaupat auki (Lieko 1992:120)  
       'let's go and buy tomorrow when the shops are open there'  
       (Elina 2;1)
- b. mä vaa yhen kellan kastelin mutt em mä enää kastele (Lieko 1992:97)  
       'I only once made it wet but I don't make it wet any more'  
       (Elina 3;3)
- c. kyllä se heti tulee jos ylität kovasti (Lieko 1992:169)  
       'sure it will come if you try hard'  
       (Elina 3;0)

The wh-word *mikä* 'what' was first used in a direct question as a question word at the age of 1;10 and in indirect questions at the age of 2;2. The first relative clause emerged in the child's speech at the age of 2;5 as the relative pronoun *mikä* 'that'. It was also the most frequent relative pronoun in the child's language. The relative pronoun *mikä* 'that' has a noun inflection, and the child used different forms of the pronoun. The relative pronoun *joka* 'who' appeared in the child's speech at the age of

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<sup>31</sup> The transcriptions and translations are from Lieko (1992).

2;7, and it was much rarer in the data than *mikä* ‘that’. The relative pronoun *joka* ‘who’ also has inflected forms in Finnish, and the child used four of them. The restrictive relative clauses were the first relative constructions, and they were the most used relative clauses in the child speech. Non-restrictive relatives appeared at 2;10. Example (53) presents relative clauses from Lieko’s data.

- (53) a. minä haluan tota kalkkii minä haluan sitä kalkkii mitä sielää hullulla on  
‘I want (to have) that candy I want the candy which is there on the shelf’  
(Elina 2;5) (Lieko1992:207)
- b. tää on semmonen yäk tyttö joka ei osaa istua  
‘this is the kind of a yucky girl who cannot sit’  
(Elina 2;10) (Lieko 1992:210)

The first use the complementizer of *että* ‘that’ came at age 2;7, and it was productive from age 2;8. When reporting direct speech as what someone else had said, the complementizer *että* ‘that’ emerged at the age of 2;9. Example (54) provides an *että*-clause from Lieko’s data.

- (54) leikitään niin että kuka om piilossa (Lieko 1992:220)  
‘let’s play so that who is hiding’  
(Elina 2;7)

To summarize, in Lieko’s data, the earliest clear CP-structure, in addition to wh-questions, were indirect questions with *mikä* ‘what’ age 2;2 and *kun* ‘when, because’ clauses age 2;3. Next emerged relative clauses with *mikä* ‘that’ at 2;5 followed by the complementizer *että* ‘that’ at the age of 2;8. Both the connector *mutta* ‘but’ and *jos* ‘if’ were productively used at the age of 3;1.

Leiko’s study was maturationist, since the child began to produce different structures at a certain age and in a certain order. Lieko’s research adopted the constructionist view, since the child constructed complex sentences from simple to more complex based on the cognitive abilities that precede the linguistic forms. Lieko (1992) claimed that the child’s main task was to map the semantic functions onto the linguistic structures.

### 4.5.2 Kangassalo (1995)

Kangassalo (1995) has focused on the development of interrogative expressions in Finnish-speaking children living in Sweden with Finnish as their first language. Like the Lieko's study, this study is most relevant for the development of CP projection. The study had 11 subjects between 1;7 and 4;1 years of age. The data were longitudinal. The purpose of the study was to research the development of interrogative syntax among Finnish-speaking children. The first questions appearing in the corpus were wh-questions on an average at the age of 1;9; that is one month earlier than yes/no-questions. The study examined what question words children used and what order they emerged in children's speech as well as what kind of questions children used in their speech. The question words were used correctly for the most part. Table 2 presents what kind of wh-words the children used and at what age in Kangassalo's study.

**Table 2.** Summary of the emergence of wh-words in Kangassalo's study

AGE	Wh-word
1;7–1;11	<i>mikä</i> 'what.NOM' <i>missä</i> 'where' <i>mitä</i> 'what.PAR'
2;0–2;5	<i>kuka</i> 'who' <i>mihin</i> 'where to' <i>miten</i> 'how'
2;6–2;11	<i>miksi</i> 'why' <i>mistä</i> 'where from' <i>minkä</i> 'what.ACC'
3;0–3;5	<i>milloin</i> 'when' <i>kenen</i> 'whose'
3;6–	<i>kumpi</i> 'which of two' <i>kenellä</i> 'who.ADE' <i>keneltä</i> 'who.ABL' <i>kenelle</i> 'who.ALL' <i>miten monta</i> 'how many'

Many early questions only contained wh-words. Sometimes, they may have contained a nominal or adverbial phrase. If early questions had a verb, it was *on* 'is'. At the age two the children began to combine wh-words with other verbs though not with auxiliaries or verbs of negation. First, wh-words were used as subjects and later as objects or attributes. At the age of three, the children began to use wh-words with



auxiliary structures and negation. Example (55) presents some questions from Kangassalo's study.<sup>32</sup>

- (55) a. Mikä tuo on?  
what that be.3SG  
'What is that?'  
(Me 2;9)
- b. Kuka toi on?  
who that be.3SG  
'Who is that?'  
(Sa 2;0)
- c. Mitä se kantaa?  
what.PAR it.NOM carry.3SG  
'What's he carrying?'  
(Ee 2;5)
- d. Miksi se ei leiki?  
why it.NOM not.3SG play  
'Why doesn't she play?'  
(Me 3;2)

The first yes/no question particle was combined only with verb *on* 'is'. At the age of two the children began to combine the interrogative particle *-kO* with some other verb forms. About the age of 2;6 the children also combined it with auxiliaries or negation. The interrogative particle was used in focused questions, when it combined either with a noun or an adverb, at the age of two. In addition, the particle *-hAn* appeared at the age of two. (The particles *-kO* and *-hAn* have the same syntax, since they are attached to the first word/phrase in the sentence.) Word order in *-kO*- and *-hAn*-questions in the Kangassalo's corpus was practically always in accordance with adult standards, the constituent with the interrogative particle being first in the clause. In neutral questions,

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<sup>32</sup> Transcriptions and translations are from Kangassalo (1995), glossings are the author's.

word order was thus always inverted, except in a clause produced by a one-year-old. Example (56) provides yes/no questions from Kangassalo's research.

- (56) a. Onko se siellä?  
           is-*kO* it.NOM there  
           ‘Is it there?’  
           (Li 2;3)
- b. Luetaanko kirjaa?  
       read.PASS-*kO* book.PAR  
       ‘Shall we read from a book?’  
       (Sa 2;5)
- c. Tämäkö on kaffimylly?  
      this-*kO* be.3SG coffee grinder.NOM  
      ‘Is this the coffee grinder?’  
       (Me 2;11)
- d. Tuoltako vaan?  
      from.there-*kO* only  
      ‘Only from there?’  
       (Ee 3;8)

To summarize the earliest forms of questions and clitics in Kangassalo's study, the children first acquired wh-questions with wh-words *missä* ‘where’, *mikä* ‘what’ and its partitive form *mitä* ‘what.PAR’ at the age of 1;9. Yes/no questions with question particle *-kO* appeared at the age of two when it merged with main verbs only. At the age of 2;6 question particle *-kO* also merged with auxiliaries or negation. In addition, particle *-hAn* was used at the age of two. We will return to acquisition of questions and the particles *-kO* and *-hAn* as well as the question of how the CP-projection develops with my data. Kangassalo's research was descriptive, and it described orders of acquisition and frequencies of usage for different types of questions.

## 4.6 Previous studies on negation

### 4.6.1 Kauppinen (1982)

Kauppinen (1982) has studied Finnish negation from the functional perspective. Data were collected from one child (apparently a boy) with the diary method by observing the child's speech and behavior. Only negative sentences in the data were analyzed. The data collection began from the birth and ended when the child was 3;1 years of age.<sup>33</sup> At the age of 1;11 the child began to use non-existential clauses, which referred to the non-existence or non-presence of something (*ei ole X* 'is not X'), and, after this, at the age of 2;0, came structures where a third person singular negation was produced before a third person singular agent and a predicate (*ei se isi syö piirakkaa* 'not the daddy eats pie', grammatical in adult language). The negative imperative appeared first alone at the age of 1;8 and with a verb at 2;0. The complementizers, which can be combined with negation, *mutta* 'but' emerged at the age of 2;8 and *vaikka* 'although' at the age of 3;0. Based on the discussion, the earliest negative forms were third person singular forms, and other verb forms appeared later. This article did not have syntactic analysis, so it is difficult to say anything about Root Infinitives, null subjects or word order. More recent work on the acquisition of Finnish negation will be discussed next.

Kauppinen's study was functional and partly cognitive, which is due to the use of Piaget's cognitive development theory. The first linguistic negation consisted of an existential clause, which was also the most common negation clause type in the child's early language. After existential negation, the child began to use the negation to express the end of existence. Kauppinen (1982) described the development of the negation in different stages. She argued that the function determined the development of negation not the form of the language.

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<sup>33</sup> Kauppinen also studied child's behavior with negation before he could talk. I have presented here only spoken language.

#### 4.6.2 Saikkonen (2005)

Saikkonen (2005) has studied negation in Finnish language acquisition in her master's thesis. The thesis researched how negation evolves in the Finnish language, what kind of errors children make in the acquisition of negation in the Finnish language and how the acquisition of negation in the Finnish language differs from that in other languages. In this study the data were collected in a local day care center in a cross-sectional method. In addition, the data from Toivainen's (1980) study was used. The age distribution of the children was from 1;1 years of age to 5;5 years of age. The data included 1323 negation utterances from 53 children. This study made clear that children can place negation in the correct position in their utterances from very early on, and errors where the negation was placed after the verb did not occur.<sup>34</sup> Only seven utterances with negation had incorrect agreement morphology where third person singular negation *ei* 'not' had a different reference. Before the age of two the children had utterances where the subject NP was under negation and the verb (*ei pure toi*, 'that does not bite')<sup>35</sup> and where an overt subject was missing entirely. The children under the age of two also used negation with nouns without a verb (*ei kirja*, 'not book'). An object was in the correct, partitive case, required in typical negative sentences in Finnish when the children began to use objects from age 2;1.

The children made only a few errors in their negative utterances. They placed negation in the correct position above the main verb, and, most of the time, negation agreed with the subject in the correct way. The most frequent error was subject omission in third person.

#### 4.6.3 Brattico and Saikkonen (2010)

Brattico and Saikkonen (2010) have studied subject position of the children's negative constructions with utterances in overt complementizers. The data of the study came from three sources, which were Toivainen (1980), Kauppinen (1982), and the third set

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<sup>34</sup> The age when the children began to use negation with verbs was not given, nor were the different agreement forms of negation distinguished.

<sup>35</sup> The study did not give analysis of why the subject behaved in this way.

of data came from Saikkonen (2005). The data included 93 negative utterances with an overt complementizer, which the children began to use at the age of 2;4. In example (57a) we can see the child's utterance with an overt complementizer with negation and in (57b) the child's negative utterance without a subordinate clause. The examples are from Brattico and Saikkonen (2010).

- (57) a. Kun      junat                      ei              halua      vaunuja...  
           when    train.NOM.PL    not.3SG    want.INF    wagon.PAR.PL  
           ‘When trains do not want wagons...’  
           (Minna, 5;8)
- b. En              mä              halua.  
           not.1SG    I.NOM    want  
           ‘I don’t want to.’  
           (Suvi, 5;4)

The data showed that the complementizer was followed by the overt subject, and the negation came after the subject, as in example (57a). In contrast, when the complementizer was not present, the subject is placed under the negation and not above it (57b) in most of the contexts. This pattern is compatible with adult spoken Finnish.

The subject moved to the position of grammatical subject if and only if an overt complementizer was present. Brattico and Saikkonen (2010) proposed the subjects were located between two functional heads, Neg and V when the children's complementizer system was not fully acquired.

#### **4.6.4 Brattico and Saikkonen (ms.)**

The aim of the study was to find out the course of the acquisition of negation in Finnish where negation is placed above the TP. Brattico and Saikkonen's (ms.) data constituted a total of 1328 transcribed Finnish negative utterances. The data came from Toivainen (1980) and Saikkonen (2005). The study investigated children's errors when acquiring negation in Finnish. For this, the utterances were grouped into seven age groups based on the chronological age of the child who provided the utterance. Errors were divided into fourteen categories. All errors were considered, no matter how infrequent or

frequent they were. The most common errors the children made were related to the omission and positioning of the subject. The children never positioned the negation in a post-verbal position. So, Finnish children always placed negation in the correct position above a verb. Based on this, Brattico and Saikkonen suggest that the grammar of negation and the corresponding NegP must be acquired by the time the children begin to use negation in Finnish, before the age of two, contrast with other languages. This result is compatible with Wexler's (1998) suggestion of Very Early Parameter setting where children have set parameters in correct position before the age of two. Since children omit subjects in their early speech, Brattico and Saikkonen suggested that subject omission in Finnish child language could be explained by Rizzi's (1993) truncation hypothesis.

## 4.7 Summary

Based on previous studies, in addition to the imperative, the third person singular verb form is the first verb form children acquire in Finnish, and these are also the possible Root Infinitive verb forms (Bowerman 1973; Toivainen 1980). The subjects are researched only with negation, and they are omitted in the third person (Saikkonen 2005; Brattico and Saikkonen ms). As far as functional projections are concerned, there is some evidence that the past tense and negation are acquired very early (Laalo 1997; 1998; 1999; Toivainen 1980). In addition, only few errors occur with negation (Saikkonen 2005; Brattico and Saikkonen 2010). In the next stage, agreement is acquired (Toivainen 1980). In terms of the CP, children begin to use wh-questions at the age of 1;9. The next CP-level construction is yes/no questions at the age of two, and they are fully productive at the age of 2;6. The particle *-hAn* also emerges at the age of two (Kangassalo 1995). Indirect questions with wh-word *mikä* 'what' appears at the age of 2;2. The first complementizer is *kun* 'when, because' at 2;3. Relative clauses with the relative pronoun *mikä* 'what' began to be used at age of 2;5, which is followed the complementizer *että* 'that' at 2;8 (Lieko 1992). To conclude, in an early stage, Finnish children have past tense and negation, but agreement emerges later. For CP-level, Finnish children have wh-questions early on, but yes/no questions, discourse particles

and complementizers emerge at a later stage. After this stage, the complementizer *että* 'that' emerges.

For more recent work on Finnish language acquisition, Kunnari et. al (2011) have researched children with specific language impairment (SLI) and their use of tense and agreement inflections in Finnish comparing them to normally developing children. Kunnari et. al (2014) have studied the use of negative inflections by Finnish-speaking children with and without specific language impairment. Leonard et. al (2014) have researched Finnish children with specific language impairments and a group of typically developing children comparing their use of accusative, partitive, and genitive case suffixes. However, the problem with all of these SLI-studies is that even the contrast group, the typically developing children, deals with children over three years old; thus, these studies are not relevant for earliest acquisition, the topic of my research. In addition, Stolt (2009) has studied the development of Finnish lexicon with full-term and the very-low-birth-weight children, who were between nine months and two years of age during the research. The full-term children's grammar was also studied at the ages 1;6 and 2;0. Similarly to Toivainen's and Laalo's study, the children first acquired the third person singular verb form and the imperative. The first case forms in the Stolt study were also the nominative and partitive, as was the case in the studies by Toivainen and Laalo.

## 5 METHODS

### 5.1 Research questions

In this section I will present research questions and hypotheses associated with them.

#### 5.1.1 Research questions on subject acquisition in child Finnish

First, I will discuss research questions and hypotheses of subjects in the Finnish child language. Recall that standard Finnish has a partial pro-drop system where subjects can be omitted in the first and second person but not in the third. In addition, standard and spoken Finnish have different grammars, and, in spoken Finnish, subjects are overt in all persons. Children are exposed to both of these languages, since they hear standard Finnish from children's books and television programs directed to children. The situation with third person subjects is similar to that of English, and omitting the grammatical subject is usually ungrammatical. For this reason, the research questions are divided between third person and first and second person subjects. The following research questions are asked about third person subjects in the Finnish child language:

Q1: What are the development stages in the third person nominal subject?

Q2: Is there a connection between third person agreement and null subjects?

Based on the first research question, the following hypotheses are formed:

H1A: Children have an early stage when third person subjects are omitted, as found in the acquisition of non-pro-drop language.

H1B: Children have a later stage when subject omission is not possible in the third person, as in the target grammar.

These two hypotheses are based in research of non-null subject languages such as English.

Based on cross linguistic data, we would assume to a connection between agreement and null subjects. In Finnish the situation is more complex because, as we will see in the next section, the third person singular verb form is the Root Infinitive form in the Finnish child language. Hence, we would expect that, at some point in development, the third person singular verb form, which can be assumed to be the default verb form



in early child Finnish, is reanalyzed as a third person singular verb form with an agreement affix. Thus, the following hypothesis is formed:

H2: An intermediate stage can be expected when the null subject decreases, and third person singular verb form is analyzed as agreeing. The decrease in null subjects is related to the reanalysis of third person singular agreement as a third person singular affix.

As stated above, the first and second person have two distinct grammars. In standard Finnish, it is pro-drop and in spoken Finnish non-pro-drop. Predictions for the child language are less clear for the first and second person than they are for the third person, since children hear both standard Finnish, which is pro-drop, and spoken Finnish, which is non-pro-drop. The following research questions are asked about first and second person subjects in child Finnish:

Q3: How is the first and second person subject pattern acquired in Finnish?

Q4: Which grammar is acquired first, the non-pro-drop or the pro-drop grammar?

Q5: Is there a connection between subject development and first and second person agreement morphology?

Since the children acquire spoken Finnish, the non-pro-drop grammar is expected to be acquired before the pro-drop grammar. Thus, the grammar of standard Finnish is acquired later.

Based on these research questions, the following hypotheses are formed:

H3: In spoken Finnish, first and second person subjects are acquired in the same way as in developmental stages of the third person. As such this is analogical to hypotheses H1A, H1B and H2, above.

H4: According to the stages in the preceding hypothesis, H3, the pro-drop grammar of standard Finnish is acquired after the grammar of spoken Finnish (H3).

H5: The children's acquisition of agreement in first and second person morphology and the acquisition of adult null subject patterns are connected.

If these hypotheses hold, the predicted stages of acquisition of first and second person are that, in the first stage, children do not use subjects with first and second person verb forms in the same way as in third person. In the second stage, children use subjects as in spoken adult Finnish (non-pro-drop). In the third stage, two variants of grammar, spoken and standard, have been acquired.

### 5.1.2 Research questions on Root Infinitives in child Finnish

Second, I will present research questions and hypotheses for Root Infinitives in the Finnish child language. Recall that the Root Infinitive verb form has varied in null-subject languages. In the German child language (Clahsen 1990), the Root Infinitive verb form is an infinitive. In Italian, it may be an imperative (Salustri and Hyams 2003), and, for Spanish and Catalan, the third person singular has been suggested as equivalent to the Root Infinitive (Grinstead 1998; Davidson and Legendre 2003). Since it will turn out that the Root Infinitive verb form in child Finnish is not infinitive, nor any kind of non-finite form, the term Root Default will be adopted here according to Paradis and Crago (2001). The following research questions are asked about Root Defaults in Finnish child language:

Q6: What verb form is the Root Default in child Finnish?

Q7: Is there a connection between the Root Default verb form and agreement?

Based on the sixth research questions, the following hypotheses are formed:

H6A: An infinitive verb form is equivalent to the Root Default verb form in child Finnish.

H6B: The first verb form acquired by children, the imperative, is equivalent of Root Default verb form in child Finnish.

H6C: The second verb form acquired by children, third person singular, is equivalent to the Root Default verb form in child Finnish.

The first hypothesis is equivalent of German child language. The second is derived Italian, as well as, the fact that an imperative is the first verb form in child Finnish according to Toivainen (1980). The third hypothesis is based on that the third person singular is early verb form in Finnish child language (Toivainen 1980). This proposal of the Root Default is equivalent to Grinstead's (1998) proposal for Spanish and Davidson and Legendre's (2003) for Catalan.

The connection between the Root Default verb form and agreement is unclear, since we do not know which verb form represents the Root Default verb form in child Finnish. This will be considered when the Root Default verb form in Finnish is established.

### 5.1.3 Research questions on functional projections in child Finnish

Third, I will discuss the development of functional projections in child Finnish as well as research questions and hypotheses associated with them. Recall that the traditional view is that children have all the same functional projections as adults. The following research questions are formed to address functional projections in child Finnish:

Q8: Which functional projections if any have been acquired at the beginning of language acquisition?

Q9: If children do not have all the functional projections from the beginning of language acquisition, in which order do they develop?

Based on the eighth and ninth research question, the following hypotheses are formed:

H8A: Children have all the same functional projections as adults.

H8B: Children have some but not all functional projections from the beginning of language acquisition.

H8C: Children do not have any functional projections at the beginning of language acquisition.

H9: If children do not have all the functional projections, they develop gradually one at a time.

The H8A hypothesis is equivalent to Wexler and Poeppel's (1993) Full Competence hypothesis. In addition, Boser et. al. (1992) suggest that children have all the same functional projections as adults. The H8B hypothesis is from Clahsen (1990) where German children have one functional projection above VP. Radford (1990) proposes that children do not have any functional projections at the beginning the language acquisition (and all the functional projections emerge at once). This proposition is similar to the H8C hypothesis. Vainikka and Young-Scholten (2011, 2013) suggest that children will acquire one projection at a time. This is equivalent to the ninth hypothesis. Many studies have observed that children can optionally produce grammatical and ungrammatical utterances in the same stage of language development (e.g. Legendre et al. (2002)).

## **5.2 Participants**

The participants in the study were two monolingual Finnish girls, Milla and Laura. They both lived in Southern Finland; Laura was from the Helsinki area. All parents were also from Southern Finland. The children had not been found to have any developmental problems with cognitive skills, language skills or socio-emotional skills. Both children had normal hearing and vision. Milla lived with her parents, and she was the only child of the family. Milla attended day care five days a week about eight hours a day. On weekends, Milla was often taken care of by her maternal grandmother, but her parents were also present. Laura lived with her mother, father and two siblings. Laura was the youngest child with a sister six years older and a brother four years older than herself. Laura's sister was in school all day and, her brother was in preschool for half of the day on weekdays (five days a week). Laura spent most of her days at home with her mother. For the last four months of the taping period, Laura was in daycare five days in a week, six hours per day. Both families had middle socio-economic status.

The data collection was scheduled to start when a child began to produce in two-word utterances and was completed at about three years of age when all the main structures of the target language had been acquired. Thus, the children were at the very beginning of the two-word stage when the data collection began. Milla was 1;8 years old when the data collection began and 3;0 years old when it was completed. The data collection of Laura began when she was 1;10 years old and when it finished she was 3;1 years old. In order to guarantee the children's anonymity, all names and places have been changed. Only information relating to age and gender has been documented. Written permission for the study was obtained from the parents, and the ethical guidelines of University of Helsinki were followed.

## **5.3 Data collection**

The data was collected as a longitudinal study. Brown's (1973) research was the first longitudinal study in the language acquisition field. After that, longitudinal studies have been a typical way of doing research in this field. CHILDES has many corpus of language acquisition from several languages (MacWhinney 2000). The data collection

of this present study follows methods introduced in these earlier studies where it is assumed that a one-hour snapshot once a month will suffice to produce satisfactorily data from the child. It is expected that one hour is enough time to get the information on what structures the child has acquired. Language acquisition at the syntactic level can be assumed to begin when children begin to produce two-word (or morpheme) utterances, since no syntactic structure is visible at the one-word level.

The video recordings were designed to obtain spontaneous speech from the children. The data were collected in free play situations, and usually the children were playing with different toys (e.g. Duplo Legos, building railway, dolls), reading books, putting puzzles together or drawing. Both children played with toys they had in their homes. Since the recording sessions were long, the children were allowed to change the play and the room during the recording. Usually the children played more than one game in one taping session. If the child did not speak much, some incidental questions of books or toys were asked, but otherwise the child spoke without guidance.

The video recordings were made in the children's homes once a month. The shortest interval was 20 days and the longest 49 days. The median was 30 days. The data consisted of 32 recordings total. At an average, one video recording lasted 58 minutes. One-hour duration was decided beforehand. Based on other studies, it seemed to be enough time to document the structures the child knew in her speech. An attempt was made to stop recording at convenient points, e.g., when the child was changing games or action. In addition, if the child just began to run around or was not interested in playing anymore, the recordings were stopped. The shortest taping lasted 37 minutes and the longest one 80. An average for all the recording sessions was 257 utterances. The data included 8410 utterances total, of which 7584 utterances were included in the analysis. The following types of utterances were excluded from analysis: imitations of immediately preceding adult utterance, singing, sentences with unfinished words and sentences that were either fully or partly unintelligible. Even when they were excluded from the analysis, they were included in the analysis file so that the information about the whole amount of utterances would not disappear.

**Table 3.** Milla's taping session information

File	Age	Number of utterances	MLU
File1	1;8:2	237	1.14
File2	1;9:1	135	1.07
File3	1;10:2	118	1.58
File4	1;11:2	234	1.65
File5	2;0:1	356	1.65
File6	2;1:1	204	1.98
File7	2;2:1	223	1.83
File8	2;3:1	251	1.96
File9	2;4:2	315	2.17
File10	2;5:2	308	2.24
File11	2;6:1	295	2.30
File12	2;7:1	230	2.01
File13	2;8:2	195	2.39
File14	2;9:2	460	2.76
File15	2;11:0	236	2.84
File16	2;11:3	436	3.21
File17	3;0:3	383	3.06

**Table 4.** Laura's taping session information

File	Age	Number of utterances	MLU
File1	1;10:3	93	1.19
File2	1;11:3	186	1.23
File3	2;0:3	224	1.84
File4	2;2:0	237	1.79
File5	2;2:3	268	1.99
File6	2;3:3	280	2.46
File7	2;4:3	317	2.64
File8	2;5:3	235	2.63
File9	2;6:2	284	2.89
File10	2;8:0	259	2.73
File11	2;8:3	149	2.77
File12	2;9:3	313	3.09
File13	2;10:2	226	3.09
File14	2;11:3	276	3.06
File15	3;1:0	262	3.28

Tables 3 and 4 present information about taping sessions. The file indicates the number of the taping session, the age is given in years, months and weeks, the number of utterances tells how many utterances the child made per taping session, and MLU is the mean length of utterances.

The mean length of utterances (MLU) is a descriptive measure of early speech, it counts the number of words (or morphemes) in each utterance, sums the utterances, and then divides by the number of utterances in the sample (Brown 1973). MLU is a better measure for early child language than age because the language development varies. MLU was calculated for every recording session separately. MLU varied between 1.08 and 3.28. MLU was calculated with words and not with morphemes since, in the early stage of the language acquisition, it is difficult to tell if a morpheme is productive or not. Thus, the child can process the nominative-case *talo* ‘a house’ and inessive-case *talossa* ‘in a house’ as two separate words, not the same word with different case

endings. MLU was calculated for both girls separately and together by adding individual MLUs and then divided by two.

In recording sessions, Milla was with her parents, and often the maternal grandmother was also present. No other children or visitors were present at taping sessions of Milla.<sup>36</sup> Milla played at least with one member of the family and the experimenter. Laura was usually home with her mother, and the experimenter played with the child alone while the mother was in the background. Sometimes Laura's siblings (with or without friends) were also present, but Laura was not actively playing with them.

The digital video camera recorder used was a Sony Handycam, and it was borrowed from the Faculty of Behavioural Sciences at the University of Helsinki. The experimenter made the recordings holding the video camera in her hand, sometimes it was mounted on a tripod on the floor or on a table with tripod near the child. The same experimenter did all the recordings.

## **5.4 Data transcription and coding**

The children's speech was orthographically transcribed. Adults' utterances were transcribed only if they influenced the grammaticality of the child's utterance or were questions directed to the child. These were situations where the child was arguing with an adult, the child answered the adult's questions, or the child imitated the adult at least partly. The first transcription was done within one week of each taping session. During this initial transcription session, the clear utterances were transcribed. Since there was difficulty in transcribing the utterances, it appears that every tape at this stage was listened to at least twice. The difficult utterances were listened to even more. If the utterance was unintelligible after this, it was left aside for further listening in the next transcription phase. Since the video and the speech were aligned in each tape, the video was always watched at the time the transcription was done.

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<sup>36</sup> Only once (in file 15), Milla's uncle was briefly visiting with Milla's father when the taping session was in progress.



Once the data collection was completed, and all the taping sessions were initially transcribed, the second transcription phase was adopted where tapes were listened to once. The purpose of this phase was to check the tapes and try clarifying unintelligible utterances. Unclear situations were listened to more than once to render them intelligible. If the utterance was not understood after several listenings, it was left unintelligible.

For every taping session, a separate text file was created where both children's and relevant adults' utterances were transcribed. The transcription was done at the morphological level, and phonological deviations were only marked if they were clear. Contextual information and nonverbal information was only included when it was needed or helped to understand what the child was saying.

From the individual text files, the children's utterances were exported to Excel spreadsheets where only the children's utterances were written in rows. If an adult's previous utterance influenced the child's utterance (grammatically or otherwise), the adult's utterance was included in a special column. These were mainly answers to questions, arguing with the adult, or imitating the adult. This explanatory column was excluded from calculation. For example, these consisted of an adult's question and the child's answer. The reason not to include adult utterances in the Excel spreadsheet row was that it would be clearer for analysis. Every child utterance was placed in its own row and is indicated by the number that row.

First, utterances were divided into three groups: unintelligible utterances, which were not taken into account in further analysis, grammatical utterances, and ungrammatical utterances. The code was provided for each group to facilitate further analysis.

After the transcription phase and initial analysis of the Excel spreadsheet, came the second phase of analysis, which was coded in columns in the Excel spreadsheet. First, the children's verb forms were analyzed (person agreement, imperative, conditional, modal, past tense, infinitives (A- and MA-), perfect and pluperfect). Second, the children's questions were examined. The data had two types of questions: wh-questions (with question words) and yes/no questions (with the suffix *-kO*). Further, wh-questions were divided for the verb *olla* 'be' and other verb forms. In addition, every wh-word was analyzed separately. Third, utterances with the complementizers (*kun* 'when, because'; *mutta* 'but'; *koska* 'since/because'; *jos* 'if'; *että* 'that') were searched for,

along with relative clauses with the relative pronouns *mikä* ‘what’ and *joka* ‘who’ as well as their possibly inflected forms and clitics. Searches were also made for the four grammatical cases (nominative, accusative, genitive and partitive). In addition, null subjects were also coded in columns. Separated codes were used for each grammatical element in the column in the same row as the sentence in the Excel spreadsheet. The coding system was the same as in the author’s Master Thesis, in which it had proven to work well. All grammatical and ungrammatical sentences were coded with all information listed. With the coding completed, it was now possible to do calculations and further analysis, which are in chapter 6.

Every taping session was analyzed and calculated separately, and some of the data will be reported in this way. The results for both girls were also analyzed and calculated for every age. In the results, the girls were documented separately, and both had their own tables. However, for some of the analysis it was more convenient to report the girls in together the same table.

## 6 DATA ANALYSIS

### 6.1 Null subjects in child Finnish

This section presents data from overt subjects and null subjects in child Finnish along with the relevant verb forms. Recall that, in standard Finnish, subjects are obligatory only in the third person, but, in spoken Finnish, they also are widely used in other persons, as well (see section 2.5). The tables are based on verb forms, and the contexts are not included.<sup>37</sup> The total columns have all the relevant verb forms with and without subjects. The null subject columns have verb forms without overt visible subjects.

#### 6.1.1 Null subjects in all persons

In this section I will give an overview of the null subjects in the Finnish child language data. Research hypotheses will be repeated later as each of the research questions are considered in more detailed. Singular and plural data is presented in different tables.

Recall that in spoken Finnish the impersonal passive verb form is used for the first person plural. Thus, 1 PL & passive columns include only the passive verb forms regardless of usage. The two usages are not separated in the tables 8, 9 and 10 (but separated analysis is provided in Table 14). Other PL columns include all the other plural verb forms, which contains also “true” for first person plural. These forms are rare, partly because, in Finnish, only the second person plural verb form is used in the spoken language. As mentioned earlier, the passive verb form is used in the first person plural, and third person singular verb form is used in third person plural contexts, as well.

Three situations were excluded from analysis, since in these contexts null subjects are the norm in adult language: certain answers to questions, debates, and weather

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<sup>37</sup> These tables concentrate only to verb forms, except in the table below which present passive verb forms (Table 14 below) where the contexts of the passive verb forms are included. Other contexts are discussed more with Root Infinitives, see section 6.2.

verbs. The analysis does not include answers to questions when the answers lack subjects and the question contains the overt subject, example (58):

(58) Q: *Onko kuvassa auto?* 'Is there a car in the picture?'

A: *On.* 'Is.'

b. Q: *Menikö auto talliin?* 'Did the car go to the garage?'

A: *Meni.* 'Went.'

The majority of the answers were *on* 'is'. Moreover, debates were not included, example (59):

(59) Mother: *Ei se mene sinne.* 'It won't go there.'

Child: *Menee.* '(It) goes.'

Mother: *Ei mene.* 'It doesn't go.'

Child: *Menee.* '(It) goes'

Weather verbs were not included either when they emerged without subjects, example *sataa* '(it) rains'.<sup>38</sup>

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<sup>38</sup> In Finnish, weather verbs allow an overt element before the verb, as *ulkona sataa* 'it is raining outside' (literally 'outside rains').

**Table 5.** Null subjects with singular verb forms in the data of two Finnish children

MLU	Age	3SG total	3SG with null subject	1SG total	1SG with null subject	2SG total	2SG with null subject
1.38	1;10	39	19 <sup>39</sup> (49%)	0	0 (0%)	0	0 (0%)
1.44	1;11	63	28 (44%)	7	3 (43%)	1	1 (100%)
1.75	2;0	164	64 (39%)	5	3 (60%)	0	0 (0%)
1.88	2;1 <sup>40</sup>	136	57 (41%)	9	9 (100%)	0	0 (0%)
1.91	2;2	95	31 (33%)	46	29 (63%)	1	1 (100%)
2.21	2;3	157	30 (19%)	64	43 (67%)	0	0 (0%)
2.40	2;4	210	11 (5%)	53	25 (47%)	4	1 (25%)
2.44	2;5	158	9 (6%)	82	39 (48%)	4	4 (100%)
2.59	2;6	186	11 (6%)	79	26 (33%)	20	12 (60%)
2.37	2;7 <sup>41</sup>	136	10 (7%)	49	15 (31%)	4	4 (100%)
2.58	2;8	106	6 (6%)	46	11 (24%)	2	2 (100%)
2.92	2;9	258	11 (4%)	79	19 (24%)	16	3 (19%)
2.96	2;10 <sup>42</sup>	131	4 (3%)	68	17 (25%)	8	4 (50%)
3.13	2;11	251	8 (3%)	87	31 (36%)	20	12 (60%)
3.17	3;0 <sup>43</sup>	211	6 (3%)	65	28 (43%)	15	8 (53%)
SUM		2301	305	739	298	95	52

Table 5<sup>44</sup> presents verb forms with subjects and without; both girls are in the same table. The two girls are separated in the two following Tables 6 and 7.<sup>45</sup> Table 5 shows

<sup>39</sup> Laura had ten utterances with subjects and they were all *toi on* ‘that is’

<sup>40</sup> Laura’s 2;1 recording was done 2;2 and one day.

<sup>41</sup> Laura’s 2;7 recording was done 2;8 and one day.

<sup>42</sup> Milla’s 2;10 recording was done 2;11 and one day.

<sup>43</sup> Laura’s 3;0 recording was done exactly 3;1.

<sup>44</sup> Tables where the children are together begin from the age of 1;10 because this is the age when both girls produced the data. Milla’s first two recordings can be seen in her tables.

<sup>45</sup> First and third person percentages are also presented in graphs 1–4 below.

that the children used subjects with the third person singular verb forms from the beginning of the data collection together with null subjects, but only about half of the utterances had subjects. At MLU 2.21 (age 2;3), null subjects decreased considerably. At MLU 2.40 (age 2;4), only a few utterances had null subjects, and most of the utterances emerged with subject, as in the target grammar.

For the first and second persons, the picture is not so clear. In first person singular, null subjects decreased from MLU 2.40 (age 2;4) on when about half of the utterances contained subjects and the other half did not. The null subject decreased further at MLU 2.59 (age 2;6). In addition, the number of the subjects varied more than in the third person singular. After MLU 2.59 (age 2;6), the percentage of null subjects was between 23% and 43%. Recall that the child has two conflicting input grammars in the first and second person, in spoken Finnish, first and second person subjects are usually used, while in standard Finnish they can be omitted. The second person singular verb forms were rarer than other person forms, but, on the basis of Table 5, it can be said that most of the utterances emerged without subjects, and the first subject appeared at MLU 2.40 (age 2;4).

**Table 6.** Milla's null subjects with singular verb forms in the data

MLU	Age	3SG total	3SG with null subject	1SG total	1SG with null subject	2SG total	2SG with null subject
1.14	1;8	14	11 (79%)	0	0 (0%)	0	0 (0%)
1.07	1;9	8	7 (88%)	0	0 (0%)	0	0 (0%)
1.58	1;10	26	16 (62%)	0	0 (0%)	0	0 (0%)
1.65	1;11	45	15 (33%)	6	2 (33%)	1	1 (100%)
1.65	2;0	61	24 (39%)	3	1 (33%)	0	0 (0%)
1.98	2;1	54	11 (20%)	5	5 (100%)	0	0 (0%)
1.83	2;2	36	14 (39%)	10	5 (50%)	0	0 (0%)
1.96	2;3	70	21 (30%)	28	26 (93%)	0	0 (0%)
2.17	2;4	83	4 (5%)	34	15 (44%)	0	0 (0%)
2.24	2;5	84	8 (10%)	49	20 (41%)	3	3 (100%)
2.30	2;6	99	8 (8%)	34	14 (41%)	0	0 (0%)
2.01	2;7	55	6 (11%)	15	5 (33%)	1	1 (100%)
2.39	2;8	63	4 (6%)	14	8 (57%)	0	0 (0%)
2.76	2;9	128	1 (1%)	45	9 (20%)	12	2 (17%)
2.84	2;10	63	1 (2%)	24	3 (13%)	4	1 (25%)
3.21	2;11	141	4 (3%)	35	12 (34%)	17	10 (59%)
3.06	3;0	125	3 (2%)	33	19 (58%)	12	8 (67%)
SUM		1155	158	335	144	50	26

Milla's subjects and null subjects are presented in Table 6, which shows that Milla's null subjects in third person singular dropped at MLU 1.65 (age 1;11) when about one third of the utterances lacked subjects. At MLU 2.17 (age 2;4) null subjects decreased to approximately the adult level, and null subjects varied between 1% and 11%.

For the first person singular, null subjects dropped at MLU 2.40 (age 2;4), and, after that, about half of the utterances had subjects while the other did not. Thus, in the first person singular, the null subjects were common until end of the data collection. The

second person singular verb forms appeared at MLU 1.65 (age 1;11). The first ones came without subjects, but at MLU 2.76 (age 2;9) null subjects dropped to 17%. This percentage rose again at MLU 3.21 (age 2;11). Thus, null subjects in first and second person did not display a clear pattern.

**Table 7.** Laura's null subjects with singular verb forms in the data

MLU	Age	3SG total	3SG with null subject	1SG total	1SG with null subject	2SG total	2SG with null subject
1.19	1;10	13	3 (23%)	0	0 (0%)	0	0 (0%)
1.23	1;11	18	13 (72%)	1	1 (100%)	0	0 (0%)
1.84	2;0	103	40 (39%)	2	2 (100%)	0	0 (0%)
1.79	2;1	82	46 (56%)	4	4 (100%)	0	0 (0%)
1.99	2;2	59	17 (29%)	36	24 (67%)	1	1 (100%)
2.46	2;3	87	9 (10%)	36	17 (47%)	0	0 (0%)
2.64	2;4	127	7 (6%)	19	10 (53%)	4	1 (25%)
2.63	2;5	74	1 (1%)	33	19 (58%)	1	1 (100%)
2.89	2;6	87	3 (3%)	45	12 (27%)	20	12 (60%)
2.73	2;7	81	4 (5%)	34	10 (29%)	3	3 (100%)
2.77	2;8	43	2 (5%)	32	3 (9%)	2	2 (100%)
3.09	2;9	130	10 (8%)	34	10 (29%)	4	1 (25%)
3.09	2;10	68	3 (4%)	44	14 (32%)	4	3 (75%)
3.06	2;11	110	4 (4%)	52	19 (37%)	3	2 (67%)
3.28	3;0	86	3 (3%)	32	9 (28%)	3	0 (0%)
SUM		1168	165	404	154	45	26

Table 7 introduces Laura's utterances with subjects and without. Laura's null subjects in the third person singular dropped at MLU 1.99 (age 2;2) to 29%. At MLU 2.46 (age 2;3), null subjects decreased further being near adult level, and they varied between 1% and 10% until end of the data collection.



Before MLU 2.89 (age 2;6), most of the Laura's utterances with first person singular verb forms occurred without subjects and after, that the number of null subjects varied between 9% and 34%. The second person verb form emerged at MLU 1.99 (2;2) and occurred the first time with the subject at MLU 2.64 (age 2;4). These verb forms were quite rare, but Table 7 indicates that the null subjects dropped at MLU 3.09 (age 2;9). Next, I consider null subjects in plural contexts.

**Table 8.** Null subjects with plural verb forms in the data of two Finnish children

MLU	AGE	1PL & passive total	1PL & passive with null subject	Other PL total	Other PL with null subject
1.38	1;10	0	0 (0%)	0	0 (0%)
1.44	1;11	0	0 (0%)	0	0 (0%)
1.75	2;0	1	1 (100%)	0	0 (0%)
1.88	2;1	1	1 (100%)	0	0 (0%)
1.91	2;2	10	10 (100%)	0	0 (0%)
2.21	2;3	13	13 (100%)	0	0 (0%)
2.40	2;4	13	13 (100%)	1	1 (100%)
2.44	2;5	13	11 (85%)	0	0 (0%)
2.59	2;6	10	6 (60%)	1	1 (100%)
2.37	2;7	25	19 (76%)	0	0 (0%)
2.58	2;8	4	4 (100%)	0	0 (0%)
2.92	2;9	39	38 (97%)	5	4 (80%)
2.96	2;10	20	19 (95%)	3	2 (67%)
3.13	2;11	27	23 (85%)	9	7 (78%)
3.17	3;0	29	26 (90%)	4	1 (25%)
SUM		205	184	23	16

Table 8 presents null subjects in plural contexts. In the first person plural/passive, most of the children's utterances came without subjects. The children began to use subjects with the first person plural/passive verb form at MLU 2.44 (age 2;5), but the

null subjects remained more common until the end of the data collection. It was difficult to draw a conclusion for the use of subjects of other plural verb forms, since they were so rare.

**Table 9.** Milla's null subjects with plural verb forms in the data

MLU	Age	1PL & passive total	1PL & passive with null subject	Other PL total	Other PL with null subject
1.14	1;8	1	1 (100%)	0	0 (0%)
1.07	1;9	0	0 (0%)	0	0 (0%)
1.58	1;10	0	0 (0%)	0	0 (0%)
1.65	1;11	0	0 (0%)	0	0 (0%)
1.65	2;0	1	1 (100%)	0	0 (0%)
1.98	2;1	0	0 (0%)	0	0 (0%)
1.83	2;2	6	6 (100%)	0	0 (0%)
1.96	2;3	9	9 (100%)	0	0 (0%)
2.17	2;4	2	2 (100%)	0	0 (0%)
2.24	2;5	8	6 (75%)	0	0 (0%)
2.30	2;6	7	3 (43%)	1	1 (100%)
2.01	2;7	14	9 (64%)	0	0 (0%)
2.39	2;8	3	3 (100%)	0	0 (0%)
2.76	2;9	21	20 (95%)	5	4 (80%)
2.84	2;10	11	11 (100%)	1	0 (0%)
3.21	2;11	12	9 (75%)	9	7 (78%)
3.06	3;0	19	18 (95%)	3	1 (33%)
SUM		114	98	19	13

Table 9 illustrates Milla's null subjects in plural contexts. In the first person plural, passive verb form, the first subject emerged at MLU 2.24 (age 2;5), but the number of

null subjects remained high until the end of the data collection. Other plural verb forms were rare, and the first one emerged at MLU 2.30 (age 2;6).

**Table 10.** Laura's null subjects with plural verb forms in the data

MLU	Age	1PL & passive total	1PL & passive with null subject	Other PL total	Other PL with null subject
1.19	1;10	0	0 (0%)	0	0 (0%)
1.23	1;11	0	0 (0%)	0	0 (0%)
1.84	2;0	0	0 (0%)	0	0 (0%)
1.79	2;1	1	1 (100%)	0	0 (0%)
1.99	2;2	4	4 (100%)	0	0 (0%)
2.46	2;3	4	4 (100%)	0	0 (0%)
2.64	2;4	11	11 (100%)	1	1 (100%)
2.63	2;5	5	5 (100%)	0	0 (0%)
2.89	2;6	3	3 (100%)	0	0 (0%)
2.73	2;7	11	10 (91%)	0	0 (0%)
2.77	2;8	1	1 (100%)	0	0 (0%)
3.09	2;9	18	18 (100%)	0	0 (0%)
3.09	2;10	9	8 (89%)	2	2 (100%)
3.06	2;11	15	14 (93%)	0	0 (0%)
3.28	3;0	10	8 (80%)	1	0 (0%)
SUM		92	87	4	3

Table 10 shows Laura's null subjects with plural verb forms. Laura's utterances with first person plural/passive verb forms occurred most of the times without subjects; just like the results for Milla. Laura's first subjects in utterances with the first person plural/passive verb forms appeared at MLU 2.73 (age 2;7). Plural verb forms other than the first person/passive were rare.

### 6.1.2 Research questions and hypotheses of null subjects

The previous section gave an overview of the development of null subjects in child Finnish. Now we can move on to the research questions and hypotheses. In the following sections, each of these will be presented. In this section, I will repeat research questions and hypotheses from section 5.1 that are connected to the acquisition of subjects in Finnish child language. The first and second research questions are associated with third person subjects, and these research questions are:

Q1: What are the development stages in the third person nominal subject?

Q2: Is there a connection between third person agreement and null subjects?

The following hypotheses are connected to the first research question:

H1A: Children have an early stage when third person subjects are omitted, as found in the acquisition of non-pro-drop language.

H1B: Children have a later stage when subject omission is not possible in the third person, as in the target grammar.

The hypothesis associated with the second research questions is:

H2: An intermediate stage can be expected when the null subject decreases, and third person singular verb form is analyzed as agreeing. The decrease in null subjects is related to the reanalysis of third person singular agreement as a third person singular affix.

Recall that the first and second person have two distinct grammars in Finnish. Thus, they are considered separately from third person subjects. The research questions related to first and second person subjects are:

Q3: How is the first and second person subject pattern acquired in Finnish?

Q4: Which grammar is acquired first, the non-pro-drop or the pro-drop grammar?

Q5: Is there a connection between subject development and first and second person agreement morphology?

Based on these research questions, the following hypotheses are formed:

H3: In spoken Finnish, first and second person subjects are acquired in the same way as in developmental stages of the third person. As such this is analogical to hypotheses H1A, H1B and H2, above.

H4: According to the stages in the preceding hypothesis, H3, the pro-drop grammar of standard Finnish is acquired after the grammar of spoken Finnish (H3).

Each hypothesis will be considered in the following sections.

### **6.1.3 First versus third person singular**

I will now contrast data from the two most commonly used verb types in child Finnish, the first person singular and the third person singular; note that the two forms have a different null subject pattern in the adult grammar. The third person singular has the same grammar in standard and spoken Finnish, but the first person singular has two distinct grammars for standard and spoken Finnish. In standard Finnish, subjects are dropped, and, in spoken Finnish, they are widely used in first person singular. In terms of research questions, I consider the first, the third and the fourth research questions here. These research questions are:

Q1: What are the development stages in the third person nominal subject?

Q3: How is the first and second person subject pattern acquired in Finnish?

Q4: Which grammar is acquired first, the non-pro-drop or the pro-drop grammar?

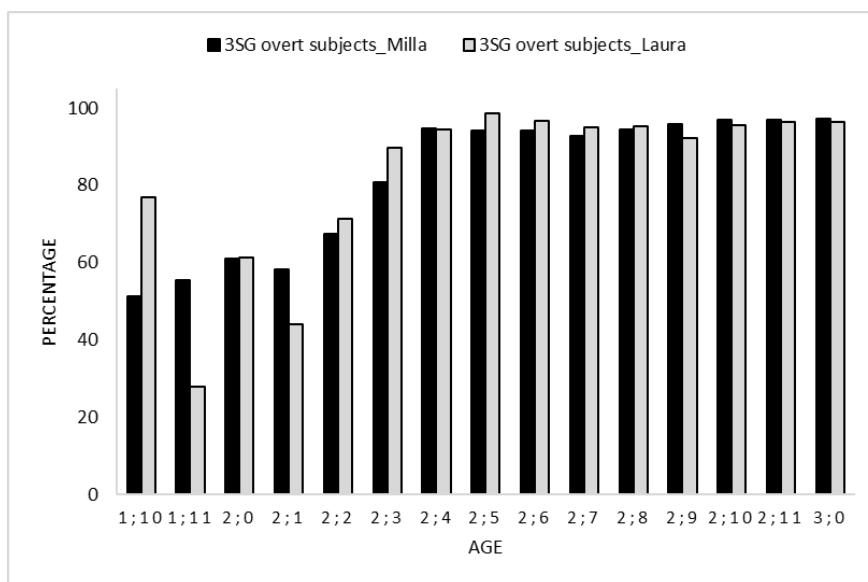
Table 11 provides data on the children's use of null subjects in first and third person singular with the percentages of total number of utterances for first and third person verb forms. The raw numbers of the null subjects are presented in parentheses. As will become clear in the next section, which considers Root Infinitives, third person singular verb forms were overused in various finite contexts. This table contains third person singular verb forms regardless of the context.

**Table 11.** First and third person singular null subjects with percentages values for the data of two Finnish children

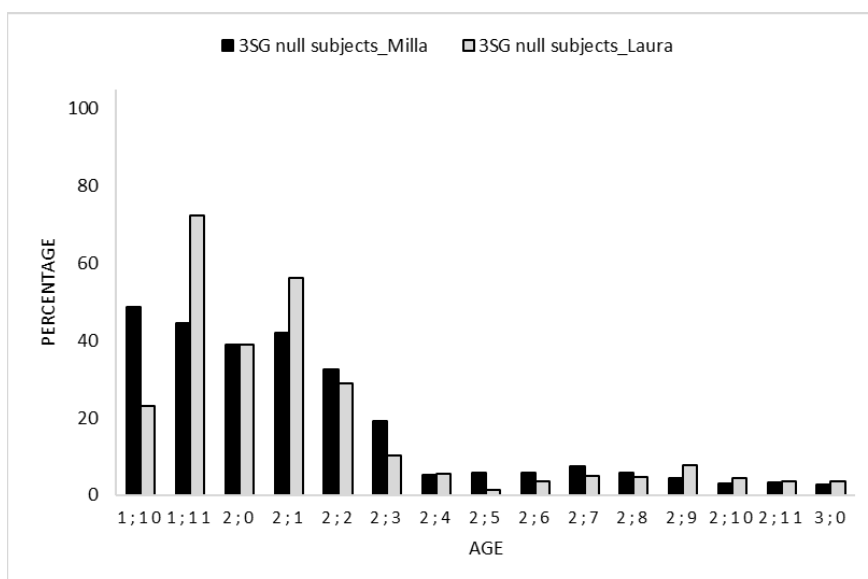
MLU	AGE	Laura 3SG	Milla 3SG	Laura 1SG	Milla 1SG
1.14	1;8	N/A	79% (11)	N/A	0% (0)
1.07	1;9	N/A	88% (7)	N/A	0% (0)
1.38	1;10	23% (3)	62% (16)	0% (0)	0% (0)
1.44	1;11	72% (13)	33% (15)	100% (1)	33% (2)
1.75	2;0	39% (40)	39% (24)	100% (2)	33% (1)
1.88	2;1	56% (46)	20% (11)	100% (4)	100% (5)
1.91	2;2	29% (17)	39% (14)	67% (24)	50% (5)
2.21	2;3	10% (9)	30% (21)	47% (17)	93% (26)
2.40	2;4	6% (7)	5% (4)	53% (10)	44% (15)
2.44	2;5	1% (1)	10% (8)	58% (19)	41% (20)
2.59	2;6	3% (3)	8% (8)	27% (12)	41% (14)
2.37	2;7	5% (4)	11% (6)	29% (10)	33% (5)
2.58	2;8	5% (2)	6% (4)	9% (3)	57% (8)
2.92	2;9	8% (10)	1% (1)	29% (10)	20% (9)
2.96	2;10	4% (3)	2% (1)	32% (14)	13% (3)
3.13	2;11	4% (4)	3% (4)	37% (19)	34% (12)
3.17	3;0	3% (3)	2% (3)	28% (9)	58% (19)

Table 11 proposes that Laura's null subjects in the third person singular were dropped near adult level slightly earlier than Milla's. They both produced subjects with third person singular verb forms from the beginning of data collection. Laura's first utterances with first person singular verb forms were all null subject utterances until MLU 1.99 (age 2;2). In contrast, Milla also produced subjects with first person singular verb forms from MLU 1.65 (age 1;11) when she began to use first person singular verb forms.

Recall that Table 11 presents the percentages of the children's null subjects in the first and third person. These percentages are described in the graphs below. In Graph 1 we see third person singular verb forms with overt subjects and in Graph 2 without subjects. Both girls are presented in the same graph. Graphs of overt subjects and null subjects are included to clarify the acquisition pattern.



Graph 1. The children's overt subjects in third person singular in the data



Graph 2. The children's null subjects in third person singular in the data

Graph 1 shows the gradual growth of overt subject use to the same level as in the target grammar. The second Graph establishes that around MLU 1.88 (age 2;1) the null subjects have dropped noticeably, especially in Laura's data. The children reached the level of adult grammar at around MLU 2.40 (age 2;4).

Now, I will answer the first research question about how the third person subjects are acquired in Finnish child language. The following two hypotheses are connected to the first research question:

H1A: Children have an early stage when third person subjects are omitted, as found in the acquisition of non-pro-drop languages.

H1B: Children have a later stage when subject omission is not possible in the third person, as in the target grammar.

Three stages can be identified in the acquisition of Finnish third person singular subjects. In the first stage, about the half of the utterances occurred with subjects in the third person singular. This stage corresponds the early stage in H1A. Milla's first stage was between 1.14–1.58 MLU (between 1;8 and 1;10) and Laura's MLU 1.19–1.79 (between 1;10 and 2;1). The second stage is an intermediate stage where about two thirds of the utterances had subjects. In Milla's second stage (intermediate stage), the MLU was 1.65–1.96 (from 1;11 to 2;3), and Laura's MLU was 1.99 (age 2;2). In the third stage, the null subject utterances dropped to nearly that of the adult level (11 % or less). This corresponds the later stage in H1B. Milla was in the third stage at MLU 2.17 (age 2;4) and Laura at MLU 2.46 (age 2;3). Thus, the children produced grammatical utterances with a subject and ungrammatical ones without at the same stage. Table 12 summarizes null subjects in the third person singular.

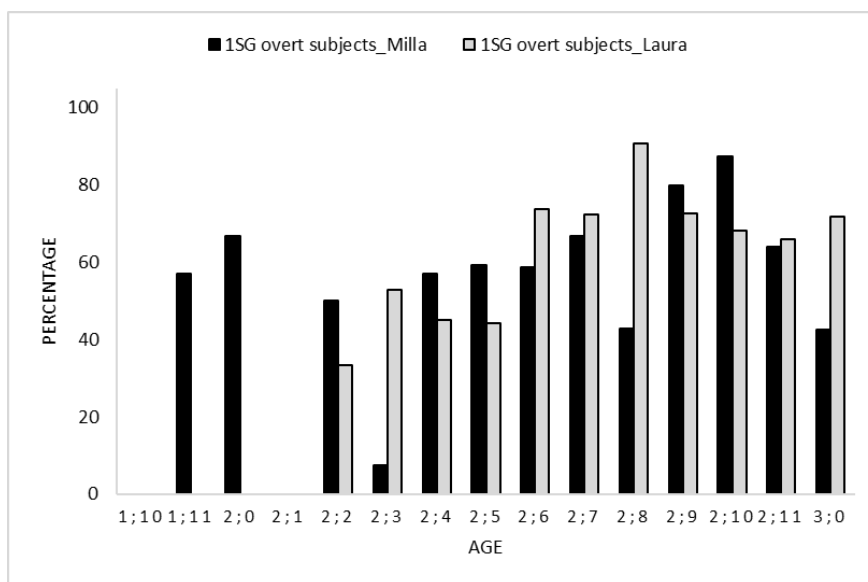
**Table 12.** Two Finnish children's null subject in percentages in third person singular

	Stage I	Stage II	Stage III
Laura 1SG	47%	29%	5%
Milla 1SG	71%	32%	4%

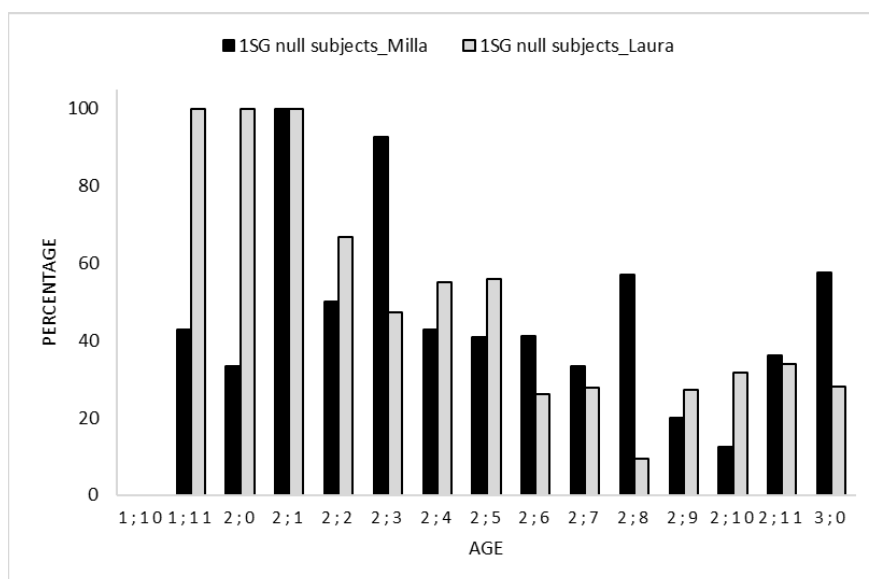
Thus, both H1A and H1B were supported by the data. The response to the first research question is that third person singular subjects are acquired in the same phases as the subjects in regular pro-drop languages. According to Hyams and Wexler (1993), Adam omitted 55% of all subjects in the first stage. During the second stage, he dropped subjects at a rate of 29%. Eve's subjects dropped to 39% in the first stage and 15 % in the second stage. In the third stage, both are at near adult level.

The following two graphs present corresponding data for the first person singular. Both girls are shown in the same graph.





Graph 3. The children's overt subjects in first person singular in the data



Graph 4. The children's null subjects in first person singular in the data

In Graph 3 is first person singular verb forms with overt subjects and in Graph 4 without subjects. The null subject pattern in the first person singular is less clear than in third person, since it has two separated grammars. Recall that in Lappalainen's study,

90% of the first person singular utterances in adult spoken Finnish had subject pronouns. Thus, first person singular subject pronouns are widely used in spoken Finnish, and they are omitted in standard Finnish. Third person subjects are used in both grammars. Laura did not produce subject pronouns in the first person singular in her early language. In contrast, Milla used some subject first person singular pronouns in her early language. Recall that raw numbers are low for data in the children's early language. In the first person, the percentage for null subjects decreased at MLU 2.46 (age 2;3) for Laura 47% and at MLU 2.17 (age 2;4) for Milla 44%. In Graph 3, the null subject pronouns in the first person singular also decreased at MLU 2.77 (age 2;8) for Laura to 9%. At this stage, Laura's language was close to adult language level and overt subjects increased to 91%. Milla's null subjects decreased at MLU 2.76 (age 2;9) to 20%. Milla's language is close to adult language at MLU 2.84 (age 2;10) when her overt subjects increased to 87%. This might reflect grammar the acquisition of the target spoken language. The null subjects for the first person singular increased again for Laura at MLU 3.09 (age 2;9) to 29% and for Milla 3.21 (age 2;11) to 34%. This is the same stage when the percentages in Table 11 increased again. This increase is likely to be the influence of standard Finnish where the subjects are typically omitted. At this age, the children hear more standard languages from books and television programs. This may also explain the dip in Milla's data in Graph 3 at MLU 2.4 (age 2;8). Table 13 summarizes null subjects in first person singular.

**Table 13.** Two Finnish children's null subjects in percentages for first person singular

	Stage I	Stage II	Stage III	Stage IV
Laura 1SG	72 %	41 %	9 %	32 %
Milla 1SG	75 %	42 %	17 %	46 %

Next, I will briefly consider null subjects in the second person singular. Second person singular verb forms were rarer than first or third person. The data had 92 utterances with second person verb forms. In the second person singular, Milla's null subjects dropped at MLU 2.76 (age 2;9) to 17%, and at MLU 2.84 (age 2;10) utterances with null subjects were 25%. After this, null subjects varied between 59% and 67%.

Thus, the pattern was quite similar to that of the first person singular, except the first decrease of null subjects was missing.

Laura's null subjects in second person singular decreased at MLU 3.09 (age 2;9) to 25%. This is one month later than in the first person singular. Laura's null subjects increased again at MLU 3.09 (age 2;10), and after this they varied between 67% and 75%. Laura's pattern was also similar to the first person singular pattern, and, as was case with Milla, Laura did not have a first decrease stage as attested for the first person singular. However, note that the null subjects increased again in the same MLU as they decreased one month earlier. Thus, MLU does not explain Laura's subject pattern clearly in the second person singular.

Now, I will consider hypotheses connected to the third research question about how the subject pattern is acquired in the first and the second persons. The second research question and hypothesis will be considered in section 6.3.2 with agreement and finite projection. This research question is connected to the following hypothesis:

H3: In spoken Finnish, first and second person subjects are acquired in the same way as in developmental stages of the third person. As such this is analogical to hypotheses H1A, H1B and H2, above.

Since second person data is quite rare, this analysis is based on the first person singular verb forms. The first person plural is considered in the next section, since its pattern is little different from that of the first person singular.

The pattern for the acquisition of subjects in the first person singular is not so clear as in the third person. First, most of the children's utterances lack subject pronouns in the first person singular, which is similar to the earliest stage of the third person pattern. The null subjects decreased at MLU 2.40 (age 2;4) and further at MLU 2.59 (age 2;6). This corresponds what was seen in an intermediate and later stage in the third person singular pattern. The data up to here supports the third hypothesis. However, note that the first person pattern comes slightly later than the third person pattern.

In the first person singular, the null subjects dropped at the same time as in the third person singular. The children did not have intermediate stages in the first person, instead they had a second drop later than in the third person singular. At this stage, the children's grammar was near that of the adults. Since spoken and standard Finnish languages differ in the first person singular, the children were exposed to two separate input grammars. They heard standard Finnish from children's books and child oriented

television programs. Thus, the null subject levels increased again when the children got older, which could perhaps be due to their hearing more standard Finnish than before. The two separate adult grammars are possibly not acquired before children learn to read and write.

Given two separated grammars of the first and second person subjects of Finnish, the later null subject stage is found, which was not attested in the third person. For Milla, null subjects were quite rare between MLU 2.76 and 2.84 (age 2;9 and 2;10) and for Laura at MLU 2.77 (age 2;8).<sup>46</sup> Up to this point the first person pattern is similar to the third person pattern, which supports the third hypothesis. I propose that this late stage represents the pro-drop grammar of standard Finnish. Recall that spoken Finnish is non-pro-drop and standard Finnish is pro-drop in the first person singular. The patterns of the children's subjects can be expected to be mixed.

The most advanced first person singular data deals with the fourth research question repeated here:

Q4: Which grammar is acquired first, the non-pro-drop or the pro-drop grammar?

The following hypothesis is associated with this research question:

H4: According to the stages in the preceding hypothesis, H3, the pro-drop grammar of standard Finnish is acquired after the grammar of spoken Finnish (H3).

Now, the fourth research question can be answered, and the data clearly maintain the fourth hypothesis. In the data discussed so far, the spoken Finnish patterns is acquired first similar to third person pattern. However, to the latest data from 2;8 onwards, omission of first person subjects become slightly more common, reflecting the pro-drop grammar of adult standard Finnish. This might be due of standard Finnish the children hear from books that were read aloud for them and from child directed television programs.

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<sup>46</sup> Recall that, according to Lappalainen (2004), null subjects in adult Finnish were between 80 % and 100 % for women and 61 % and 91 % for men. I will not discuss the difference between women's and men's language, but the children's language resembles the women's language. The children typically spend more time with women than men. Laura was home with her mother in the daytime. Milla was at daycare, but there most of the workers were also women.

#### 6.1.4 The two usages of the passive and plural forms

Before the second and fifth research questions of agreement versus subjects are addressed, I will give an overview of plural and passive verb forms. The Finnish passive is an impersonal passive, so it does not have a subject or *by*-phrase in the adult language (see section 2.5). Table 14 presents both girls' impersonal passives and first person plural usage with passive form. However, in tradition the passive verb form in spoken Finnish is the normal first person plural verb form, and it is not interpreted semantically as a passive. In Table 14, I will call the first use an impersonal passive when the passive verb form is used unambiguously in semantically passive contexts. The impersonal passive columns only include unambiguously passive contexts (without subjects). First person plurals occur with subjects (these forms do not have passive semantics). The Other column includes all ambiguous cases (possibly first person plural forms without subject pronoun or utterances with the meaning 'let's do something' in English<sup>47</sup>). One of the passive forms in the Other column is the verb form (without subject) *mennään* 'go.PASS', which often has unclear meaning and can be more like 'let's go' in English. The first *mennään* forms emerged at MLU 1.83 (age 2;2) for Milla and at MLU 2.6 (age 2;4) for Laura.

Note that the majority of passive verb forms were used in the Other usage contexts. In many cases, the child's intended use was difficult to determine. However, many of them might have been first person plurals without subject pronouns as in the examples below, (60e-f).

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<sup>47</sup> Adults do not use the subject in these utterances, and the utterances are not used in semantically unambiguous passive contexts.

**Table 14.** The passive verb forms in the data of two Finnish children

MLU	AGE	Impersonal passive Milla	Impersonal passive Laura	1PL with subject Milla	1 PL with subject Laura	Other Milla	Other Laura
1.14	1;8	0	N/A	0	N/A	1	N/A
1.07	1;9	0	N/A	0	N/A	0	N/A
1.38	1;10	0	0	0	0	0	0
1.44	1;11	0	0	0	0	0	0
1.75	2;0	0	0	0	0	1	0
1.88	2;1	0	0	0	0	0	1
1.91	2;2	0	0	0	0	6	4
2.21	2;3	1	0	0	0	8	4
2.40	2;4	0	0	0	0	2	11
2.44	2;5	2	1	2	0	4	4
2.59	2;6	0	1	4	0	3	2
2.37	2;7	0	3	5	1	9	7
2.58	2;8	0	1	0	0	3	0
2.92	2;9	3	7	1	0	17	11
2.96	2;10	3	2	0	1	8	6
3.13	2;11	2	7	3	1	7	7
3.17	3;0	1	1	1	2	17	7
SUM		12	23	16	5	86	64

Examples (60a-b) illustrate true impersonal passive usage, (60c-d) show the same verb form used as a first person plural with a subject pronoun, and (60e-f) illustrate the other usage of the passive verb form.

- (60) a. Int: Isin kanssa oot rakentanut tornin. mikäs... no.  
‘You have built the tower with dad. What... well.’  
Milla 2;5: Siihen tarvitaan puuta.  
there.to need.PASS wood.PAR  
‘Wood is needed for it.’  
b. Int: Minä en nyt ihan usko että noin pelataan tätä peliä.  
‘I don’t think that this game is played like that.’  
Laura 2;9: Joo. Isi ei huomannu että näin pelataan tätä  
yes. dad not.3SG notice.PTCP that this play.PASS this.PAR  
‘Yes. Dad didn’t notice that this (game) is played like this.’

- c. Milla 2;5: Me ollaan sateensuojassa.  
we.NOM be.PASS rainshelter.INE  
'We are in the rain shelter.'
- d. Laura 2;8:0: Me saatiin toinen peli.  
we.NOM get.PASS.PAST other.ACC game.ACC  
'We got the other game.'
- e. Context: Milla wants to do puzzles.  
Milla 2;3: Nää.  
'These.'  
Int: Nää.  
'These.'  
Milla 2;3: Tos on kaikki.  
'There is all.'  
Milla 2;3: Mistä alotetaan?  
where start.PASS  
'Where do we start?'
- f. Context: Laura wants to build a new house with Duplo Legos.  
Laura 2;2:3: Haluun sit rakentaa uusi talo.  
'I want to build a new house.'  
Int: Mitä?  
'What?'  
Laura 2;2:3: Sit rakennetaan uusi leego talo.  
then build.PASS new.ACC lego.NOM house.ACC  
'Then we build a new Lego house.'

Examples (60a-b) show the unambiguous impersonal passive usage of the verb form. When the first person plural subject *me* 'we' was used (60c-d), it was clear that the passive verb form was used in the first person plural context. Needless to say, most of the passive verb forms were used in unclear contexts (60e-f) where the subject *me* 'we' was implicitly interpreted.

As can be seen from Table 14, the children began to use passive verb forms more at MLU 1.91 (the age of 2;2), which is illustrated in the Other column. Before that, they

only had a few passive verb forms. The first person plural subjects emerged at MLU 2.24 (age 2;5) for Milla and at MLU 2.7 (age 2;7) for Laura. However, it cannot be told whether they used the verb forms with null subject before this age. This is possible, since the Other column has many passive verb forms. The first overt subjects with passive/plural verb forms appeared later than an overt subject with first or third person singulars. Table 14 also shows that true impersonal passive usage only began at MLU 2.4 (age 2;5). Based on this, the Other usage passives were probably first person plural forms and not impersonal passives.

Now I will consider the third research question in case of first person plural. The research question is repeated here:

Q3: How is the first and second person subject pattern acquired in Finnish?

The relevant hypothesis is:

H3: In spoken Finnish, first and second person subjects are acquired in the same way as in the developmental stages of the third person. As such this is analogical to hypotheses H1A, H1B and H2, above.

The first person plural pattern is different from first and third person singular. This pattern includes passive verb forms that are clearly or probably used in first person plural contexts.<sup>48</sup> The first person plural overt subjects emerged later than in first and third person singular, at MLU 2.4 (age 2;5). If most of the verb forms from the Other column represent null subjects in the first person plural contexts, the percentage of null subjects remains higher than in the other persons until the end of the data collection. It can be assumed that the children hear more true passive verb forms without subjects than third person singular verbs without subjects, since the same verb form is used in passive contexts in the adult language i.e., the same verb form is used in the passive and first person plural contexts in the adult language.

### **6.1.5 The second and fifth research questions**

The second and fifth research questions are related to agreement, and they are repeated here:

Q2: Is there a connection between third person agreement and null subjects?

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<sup>48</sup> True first person plural verb forms are not included in this analysis, since they are so rare.



Q5: Is there a connection between subject development and first and second person agreement morphology?

The hypothesis associated with the second research questions is:

H2: An intermediate stage can be expected when the null subject decreases, and third person singular verb form is analyzed as agreeing. The decrease in null subjects is related to the reanalysis of third person singular agreement as a third person singular affix.

The hypothesis connected to the fifth research questions is:

H5: The children's acquisition of agreement in first and second person morphology and the acquisition of adult null subject patterns are connected.

The children acquired first person singular verb forms before the number of null subjects decreased in the third person singular (see Tables 5, 6 and 7). Laura used first person singular verb forms productively at MLU 1.91 (age 2;2) and Milla at MLU 1.99 (age 2;3). Third person singular null subjects decreased one month after this, i.e., at MLU 2.46 (age 2;3) for Laura and MLU 2.17 (age 2;4) for Milla. Since it cannot be attested when the third person agreement appears, I use first person agreement as a sign of the point at which the agreement paradigm is acquired. Since the third person singular is the earliest person verb form acquired, third person agreement might be expected to be acquired before that of the first person. However, I will argue in the next section that the third person singular verb form is the Root Default verb form in child Finnish, and its agreement status will be discussed at that point. In any case, there is a one-month lag in the development of agreement and acquisition of overt subjects. I will address this question in Root Infinitive section with respect to the second research question and corresponding hypothesis. Considering the first person null subject and the fifth research question, the development of subjects and agreement morphology is not connected in an obvious way.

I propose that third person singular verb forms do not agree in the same sense as they do in the adult language before the first person singular verb form emerges to in children's speech. As was suggested above, the children reanalyze the third person singular verb forms as agreeing forms after they have acquired first person singular verb forms. In addition, after the first-person singular verb forms are acquired, subjects appear increasingly in the third person singular, near adult level, from 30 % to 90 %.

### 6.1.6 Summary

The third person null subjects go through three stages of grammatical development. In the first stage, subjects are omitted in half of the utterances. In the second (intermediate) stage, the number of null subjects decreases but they are still at a higher level than in the adult language. In the third stage, the number of null subjects approaches that of the adult level.

The pattern for the first and second person is more complicated, since the children have two distinct grammars for these persons. The pattern is the same as in the third person until MLU 2.58 (age 2;8). So, the children omit subjects in the first stage. In the second (intermediate) stage, null subjects drop slightly, and in the third stage they approach adult level. After MLU 2.58 (age 2;8), the pattern is mixed, since the children hear standard Finnish from books and television programs. Spoken Finnish is acquired before standard Finnish, hence the non-pro-drop grammar is acquired before the pro-drop grammar. In the first person plural, subject omission remains higher than in other persons until the end of data collection. The connection between agreement and subjects is not very clearly supported by the data, but this question will be considered more in the next section.

## 6.2 Root Infinitives (Root defaults) in child Finnish

In this section I will discuss the so-called Root Infinitives in child Finnish. Recall that children acquiring various languages use non-finite verb forms in utterances where a finite form is required in the adult language; these are called Root Infinitives. However, it will turn out that the relevant form in Finnish is a non-agreeing third person singular verb form. Since this form is not an infinitive verb form in adult Finnish, I will adopt the term Root Default here, according to Paradis and Crago (2001).

Recall from section 5.1.2 that research questions connected to Root Defaults are:

Q6: What verb form is the Root Default in child Finnish?

Q7: Is there a connection between the Root Default verb form and agreement?

Based on the sixth research question, the following hypotheses can be formulated:

H6A: An infinitive verb form is equivalent to the Root Default verb form in child Finnish.

H6B: The first verb form acquired by children, the imperative, is equivalent to the Root Default verb form in child Finnish.

H6C: The second verb form acquired by children, the third person singular, is equivalent to the Root Default verb form in child Finnish.

First, I will give an overview of the Root Default in the Finnish child language, and then I will discuss different options for the Root Default verb form in child Finnish. The research hypotheses are answered and considered in more detailed later.

Table 15 provides different verb forms that the children used and which could be the possible Root Default forms in Finnish (the imperative, the infinitive verb forms (A-infinitive and MA-infinitive), a participle and the third person singular) in the percentage of all verb forms with the amount in parenthesis. The column Other includes all the other verb forms.<sup>49</sup> Both girls are presented in the same table. Only affirmative utterances are included in the table.

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<sup>49</sup> This column includes all personal verb forms other than the third person singular, passive, and modals with verbs *täytyy* ‘must’ and *pitää* ‘must’.

**Table 15.** The potential Root Default verb forms used by two Finnish children in the data

MLU	AGE	Imp	A-inf	MA-inf	Bare participle	3SG	Other
1.38	1;10	24% (10)	0% (0)	0% (0)	0% (0)	76% (31)	0% (0)
1.44	1;11	19% (19)	0% (0)	0% (0)	1% (1)	75% (77)	6% (6)
1.75	2;0	8% (13)	1% (1)	0% (0)	0% (0)	88% (140)	4% (6)
1.88	2;1	20% (31)	0% (0)	1% (1)	0% (0)	73% (114)	6% (10)
1.91	2;2	14% (24)	2% (4)	2% (4)	0% (0)	55% (96)	27% (47)
2.21	2;3	7% (18)	3% (7)	1% (3)	1% (3)	62% (160)	25% (67)
2.40	2;4	21% (72)	4% (14)	0,3% (1)	0% (0)	57% (200)	18% (61)
2.44	2;5	15% (46)	3% (8)	0,3% (1)	0% (0)	53% (164)	28% (88)
2.59	2;6	10% (36)	10% (36)	0% (0)	0% (0)	52% (196)	29% (110)
2.37	2;7	12% (32)	3% (7)	0% (0)	0% (0)	55% (144)	28% (73)
2.58	2;8	19% (39)	2% (5)	2% (5)	0% (0)	51% (105)	24% (49)
2.92	2;9	16% (73)	3% (14)	1% (3)	0% (0)	50% (234)	30% (139)
2.96	2;10	8% (21)	3% (7)	0,4% (1)	0% (0)	40% (105)	40% (105)
3.13	2;11	13% (60)	6% (30)	1% (5)	0% (0)	45% (218)	30% (146)
3.17	3;0	17% (70)	4% (18)	1% (3)	0% (0)	44% (184)	30% (128)

Table 15 indicates both A- and MA-infinitives were rare at the beginning of two-word stage, and they became more common at MLU 1.91 (age 2;2). Recall that these two forms were the only non-finite forms occurring in the child data. Given the developmental path, they are not plausible candidates for Root Default in child Finnish. Root Default forms are used in the very earliest stages of language acquisition and their

use diminishes over time. Most of the time, the children combined infinitive verb forms with other verbs, and they were not used alone.<sup>50</sup>

The column of bare participles includes participle forms that occur without auxiliaries. In some languages, a participle form is used as the Root default form (e.g. in Greek (Varlokosta, Vainikka and Rohrbacher 1998;)). Since participles were very rare in the data, they cannot be considered Root Defaults in child Finnish.

In previous research of the Finnish child language, it has been found that children's first verb forms are the imperative and the third person singular (Bowerman 1973; Toivainen 1980; Laalo 1997; 1998; 1999; 2011). Recall that Karlsson (1982:208) proposes that the third person singular verb form is the default verb form in the adult Finnish.

The only two verb forms that were common in the early data were the second person singular imperative and the third person singular. The imperative verb forms were used from the beginning of the data collection, as presented in Table 15. However, only a few verbs were used in imperative forms in the early language (in particular *anna* 'give' and *kato* 'look'). Further, the use of the imperative verb forms was quite steady during language acquisition. The children also used the imperative overwhelmingly in the correct contexts, even though, in some cases, the situation might be a little unclear. Imperatives were not used in contexts where finite verbs were required (61). The action was not on-going when verbs were uttered, as might be expected if these had been Root Defaults used in regular finite contexts. In addition, early imperatives were often accompanied with a gesture.

- (61) a. Anna.        Anna. (M reaching towards a piece of paper.)  
         give.IMP    give.IMP  
         'Give. Give.'  
         (Milla 1;11)

---

<sup>50</sup> Almost all of the A-infinitives occurred with another verb. MA-infinitives occurred nine times without another verb, and these emerged throughout the data not only in early ages, which would be assumed if they were RIs.

- b. Kato. (L pointing to a toy.)  
 look.IMP  
 ‘Look.’  
 (Laura 1;10)

Thus, the imperative is not the Root Default form in child Finnish.

Table 15 establishes that the children mostly used the third person singular verb form, and therefore this is the best candidate for the Root Default verb form in Finnish. Many different verbs were used in the third person singular. The third person singular verb form was also used in first person singular contexts, as can be seen in examples (62) for Milla and (63) for Laura.<sup>51</sup> In Table 15, it can be observed that the use of other verb forms was quite rare between MLU 1.44 and 1.88 (between 1;10 and 2;1), less than 10%. At MLU 1.91 (age 2;2), these verb forms increased to 27%, and after that they varied between 18% and 40%. Before MLU 1.91 (age 2;2), the third person singular verb form varied between 73% and 88% of all the verb forms. At MLU 1.91 (age 2;2), the percentage of third person singular verb forms dropped to 55%.

Example (62) shows Milla’s Root Default utterances in Finnish. The intended meaning is provided in parenthesis.

- (62) a. Milla 1;10: Kaatu (context: M fell).  
           fall.3SG.PAST  
           ‘S/he fell (I fell).’  
       b. Milla 1;10: Laittaa      takasin.  
           put.3SG      back  
           ‘S/he puts it back (I put it back).’  
       Mother: Niin laitat sen takasin siihen joo.  
           ‘Yes you put that back there.’

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<sup>51</sup> Since the children’s utterances were quite short at this stage of the language development, determining the context of the utterances was difficult in some situations. Nevertheless, the third person singular verb forms were clearly used in first person singular contexts.

- c. Milla 1;11: Ei ylety. (M does not reach to the door of the cupboard).  
no.3SG reach  
‘S/he does not reach (I do not reach).’
- d. Father: Mihinkäs se possu oikein meni?  
‘Where did the pig go?’
- Milla 1;11: Ei tiedä.  
not.3SG know  
‘S/he does not know (I do not know)’
- e. Milla 2;0 Ei kokke (koske). (M does not touch the painting).  
not.3SG touch  
‘S/he does not touch (I do not touch).’
- f. Gran: Maistatko rypäleen?  
‘Do you want to taste the grape?’
- Milla 2;0: Maistuu.  
taste.3SG  
‘S/he tastes (I taste).’
- g. Milla 2;0: Laittaa kookeelle (korkealle). (M puts towel into the hook)  
put.3SG high.ADE  
‘S/he puts on high (I put on high).’
- h. Milla 2;0: Laittaa tiikerin. (M puts the tiger on the towel).  
put.3SG tiger.ACC  
‘S/he puts a tiger (I put a tiger).’

Milla often used the third person singular verb form in a clearly first person singular context.

Turning now to Laura’s data, Laura used only a very few verb forms productively in her first two taping sessions. Her few verb forms were answers to questions or their contexts were unclear, or the included verbs *kato* ‘look’ and *on* ‘is’. Because of this, the earliest examples from Laura’s utterances come from the third taping session at the age of 2;0. The examples in (63) are Root Default utterances from Laura.

- (63) a. Laura 2;0: Ei pääse. (L tries to open the toy).  
not.3SG access  
'S/he cannot open it (I cannot open it).'
- b. Laura 2;0: Voi haijaa (harjaa). (L brushes the toy's hair)  
can.3SG brush.INF  
'S/he can brush (I can brush).'
- c. Laura 2;0: Kuukkaa (kurkkaa). (L wants to peek under the plaster).  
peek.3SG  
'S/he peeks (I peek).'
- d. Laura 2;0: Pysyy. (L tells her mother that she will stay on the chair).  
stay.3SG  
'S/he stays (I stay).'
- e. Laura 2;2:0: Ei osaa lutee (lukee). (L cannot read the book).  
not.3SG can read.INF  
'S/he cannot read (I cannot read).'

The data had 22 utterances where the child used their own name as a subject when telling what they were doing.<sup>52 53</sup> These utterances occurred between 1;11 and 2;2 years of age.

- (64) a. Milla 1;11: Milla on kookeella (korkealla).  
Milla.NOM be.3SG high.ADE  
'Milla is high (I am high).'
- b. Milla 2;0: Milla ottaa.  
Milla.NOM take.3SG  
'Milla takes (I take).'

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<sup>52</sup> The children can also use their own name with third person singular verb forms when speaking about themselves in some other languages (e.g. in Italian, Guasti 1993, Pizzuto & Caselli 1992).

<sup>53</sup> According to Davidson and Legendre (2003), these are examples of reference errors.



- c. Laura 2;0:      Mahtu              Laura.  
                          fit.in.3SG.PAST Laura.NOM  
                          ‘Laura fit in (I fit in).’
- d. Laura 2;2:0:    Laura      tuo              sen.  
                          Laura      bring.3SG    that.ACC  
                          ‘Laura brings it (I bring it).’
- e. Laura 2;2:0:    Ei              osaa Laura.  
                          not.3SG      can      Laura.NOM  
                          ‘Laura cannot (I cannot).’

Examples (62) and (63) show that the children used the third person singular when speaking about themselves along with a first person verb form, which they began to produce at MLU 1.44 (age 1;11, see section 6.3.2). In addition, they occasionally applied their own names when telling what they were doing (64).<sup>54</sup> However, most of the Root Defaults occurred without subjects. The subject is obligatory in Finnish third person. Recall from the previous section that third person verb forms occurred without subjects most of the time until the child reached the adult level at MLU 2.40 (age 2;4). Before that overt subjects increased at MLU 2.21 (age 2;3).

One verb type in the spoken language of the Helsinki area has a small complication where the infinitive and the third person singular have the same verb form.<sup>55</sup> Although one might consider the possibility that the early third person forms are infinitives in the spoken language of the Helsinki area, it becomes clear, when watching the data more carefully, that this is not the case. In example (62) Milla made several (five from a total of ten) utterances, and in example (63) Laura made most of the utterances (seven from a total of eight), where the third person singular verb form **cannot** be used as an infinitive in the spoken language of the Helsinki area.

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<sup>54</sup> Adults may also use third person singular about themselves when speaking with a child (Guasti 1993, Pizzuto and Caselli 1992).

<sup>55</sup> This is one of the six verb types in which the stem of the verb ends in a vowel. An example of this verb type is *nukkua* ‘sleep’. This one is also the most common verb type. The other verb types distinguish between the infinitive and the third person singular. An example of this type of verb is *mennä* ‘go’. (Karlsson 1982:213).

If we are to consider analyses where the child treats third person singular forms as infinitives for certain verbs types (given the spoken language of the Helsinki area), we would still need the analysis for the other third person singular verb forms that have distinct forms in the third person singular and infinitive even in the spoken language of the Helsinki area, used in the first person singular context. Furthermore, Toivainen (1980) shows that the third person singular is a common verb form in child Finnish. Toivainen's data is collected in a distinct area, and infinitive verb forms there are distinct from the third person singular forms even when they are the same as in the spoken language of the Helsinki area. Thus, it can be concluded that the third person singular verb form is the Root Default in early child Finnish. Recall that Finnish infinitives have many forms, and their use and distribution in the adult language could explain why Finnish children do not use an infinitive verb form as the Root Default.

In the previous section, the various personal forms were considered in terms of null subjects, certain sentence types were excluded due to their not being relevant for null subjects. For the sake of completeness, I provide the total number of affirmative singular person forms in Table 16. Plural verb forms occur quite infrequently, so they were omitted (see Table 8 in the previous section). Both of the girls are documented in the same table. The third person is the most frequent verb form in child Finnish, and it is over-used at least in the first person singular.

**Table 16.** Singular verb forms in the affirmative utterances of two Finnish children

MLU	AGE	1SG	2SG	3SG
1.38	1;10	0	0	32
1.44	1;11	6	1	76
1.75	2;0	5	0	139
1.88	2;1	9	0	111
1.91	2;2	37	1	96
2.21	2;3	57	0	162
2.40	2;4	44	4	200
2.44	2;5	73	4	162
2.59	2;6	70	19	197
2.37	2;7	40	4	150
2.58	2;8	36	2	114
2.92	2;9	66	16	244
2.96	2;10	58	4	126
3.13	2;11	70	16	240
3.17	3;0	55	13	202
SUM		626	85	2251

As the totals in Table 16 show, the third person singular verb form is three times more common than the first and second person singular verb forms combined. Calculating from Table 16, before MLU 1.91 (age 2;2), 95% of the singular verbs are the third person singular forms. This pattern is explained if the third person singular is the Root Default form in child Finnish.

Turning now to negative sentences, in Table 17 we find the total numbers of first, second and third person singular verb forms in negative utterances. Both girls are documented in the same table. Recall that, in Finnish, the negative verb stem *E-* takes only agreement morphology, whereas tense is shown on the main verb (see section 2.2.2). This is also demonstrated with the tree in example (6), see section 2.2.2. In Finnish, a participle is used in negative utterances. This verb form differs from the infinitive verb form, and the verb form used in affirmative utterances is in the third person singular. Based on this, affirmative and negative utterances are analyzed separately. The children did not use an infinitive verb form in their negative utterances. Instead, the children used the correct participle verb form with negation for most of the cases. Similar to the situation with affirmative utterances, the third person singular was used in the first person singular contexts. This provides further proof to the claim that an infinitive verb form cannot be the Root Default in the Finnish child language. Thus,

negation finally shows that the Root Default form in Finnish is the third person singular. Note that, in the negative utterances, the use of the infinitive verb form is not possible, and the children did not use it in their negative utterances.

**Table 17.** Singular verb forms in negative utterances of two Finnish children

MLU	AGE	1SG	2SG	3SG
1.38	1;10	0	0	12
1.44	1;11	1	0	18
1.75	2;0	0	0	33
1.88	2;1	0	0	57
1.91	2;2	9	0	35
2.21	2;3	7	0	35
2.40	2;4	9	0	32
2.44	2;5	9	0	13
2.59	2;6	9	1	18
2.37	2;7	9	0	21
2.58	2;8	10	0	15
2.92	2;9	13	0	44
2.96	2;10	10	3	25
3.13	2;11	17	4	26
3.17	3;0	10	2	29
SUM		113	10	413

As can be seen from Table 17, the third person singular verb form is the most dominantly used also in negative utterances. At the beginning of acquisition of syntax, it seems to be the only verb form that is used in both affirmative and negative utterances. Examples (62d), (62e), (63a) and (63e), repeated here as (65), show that the children used the third person negative verb form in first person contexts, as well.

- (65) a. Father: Mihinkäs se possu oikein meni?  
‘Where did the pig go?’  
Milla 1;11: Ei tiedä.  
not.3SG know  
‘S/he does not know (I do not know)’  
b. Milla 2;0: Ei kokke (koske). (M does not touch the painting).  
not.3SG touch  
‘S/he does not touch (I do not touch).’

- c. Laura 2;0: Ei pääse. (L tries to open the toy).  
not.3SG access  
'S/he cannot open it (I cannot open it).'
- d. Laura 2;2:0: Ei osaa lutee (lukee). (L cannot read the book).  
not.3SG can read.INF  
'S/he cannot read (I cannot read).'

In summary, the children used two verb forms in their early languages, the imperative and the third person singular. The imperative was typically used in a proper context and not overused in any other context (in contrast with the third person singular, which was overused in other persons especially before MLU 1.91 (age 2;2)). In Finnish, the children did not use the infinitive verb form in their early language. The infinitive verb forms emerged later at MLU 1.91 (age 2;2). While early Finnish has examples of this type of Root Default, which looks like the third person singular, it is not a regular finite verb form, since it does not have agreement in the same sense as the regular third person singular verb form in appropriate contexts does. I assume that it is not a regular finite verb at this point in language development (as is suggested for the Spanish third person singular by Grinstead (1998), or by Davidson and Legendre (2003) for Catalan). Based on Tables 16 and 17 as well as the earlier discussion, it is clear that the third person singular verb form is the Root Default form in child Finnish.

Now I can answer research questions and hypotheses associated with the Root Defaults. Recall that the research questions are:

Q6: What verb form is the Root Default in child Finnish?

Q7: Is there a connection between the Root Default verb form and agreement?

And the research hypotheses are:

H6A: An infinitive verb form is equivalent to the Root Default verb form in child Finnish.

H6B: The first verb form acquired by children, the imperative, is equivalent to the Root Default verb form in child Finnish.

H6C: The second verb form acquired by children, the third person singular, is equivalent to the Root Default verb form in child Finnish.

Neither of the A- nor MA-infinitives can be the Root Default in the Finnish child language, because neither form is attested in the earliest recordings. The idea of Root

Default is that children use this form before they acquire agreement morphology in the language. In the children's data, infinitives were very rare before MLU 2.21–2.40 (age 2;3–2;4); the third person singular finite form is acquired much earlier. The children also combined these infinitive verb forms with other verbs in the correct way, and they rarely occurred alone. Thus, the data does not support the H6A hypothesis, and an infinitive verb form cannot be the Root Default in child Finnish.

The children used imperative verb forms from the beginning data collection. However, these forms were not used in a finite context. Thus, the children only used imperatives in correct imperative contexts. This shows that imperatives were not overgeneralized to other contexts, as could be expected for Root Default forms. In addition, imperative verb forms were not used as frequently as the third person singular, and the children only used a few verbs in imperative contexts in their early speech. Further, imperatives occurred quite regularly in the data during language acquisition when Root Default forms are expected to decrease over time. Thus, an imperative cannot be the Root Default verb form in child Finnish, and the H6B hypothesis is not supported by the data.

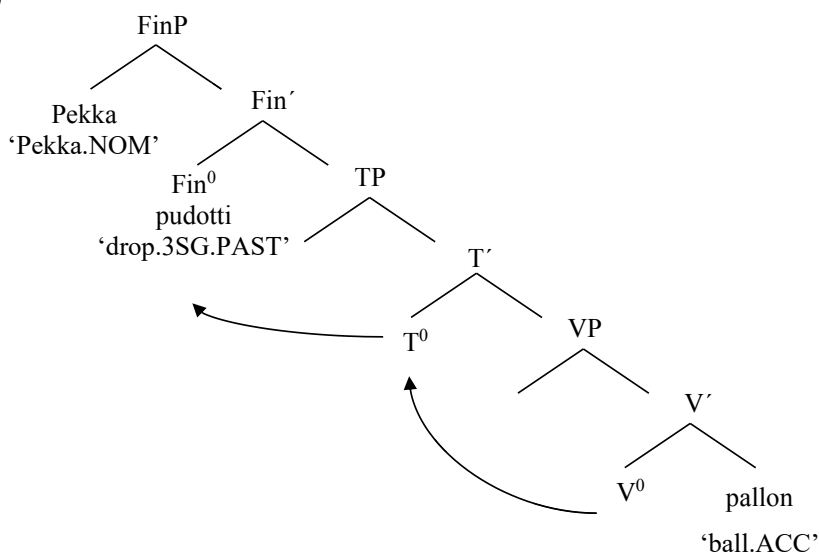
The only remaining possible candidate for Root Default verb form in the Finnish child language is the third person singular. This is the early verb form produced by the children, and it is used in contexts other than third person singular, mainly the first person singular as can be seen in the examples (62) and (63). In divergence from the adult grammar, the children used third person singular verb forms with and without overt subjects. In addition, over 70% of the children's utterances had third person singular verb forms before MLU 1.91 (age 2;2), and, after that, these verb forms dropped to 55%. This is compatible with observations from other languages, i.e., the use of Root Infinitives decreases over time. Thus, the H6C hypothesis is supported by the data, and this form is the Root Default form in child Finnish, which is also the answer to the sixth research question.

With regard to the seventh research question, it is difficult to determine the connection between the Root Default verb form and agreement. However, it has been suggested in the null subject discussion that Root Defaults may be treated as agreement forms when first person agreement is acquired. In the next section, the development of agreement will be discussed in the connection to functional projection FinP. I will return the seventh research question in the next section.

### 6.3 Basic functional projections

In this section I will present IP-level functional projections in the Finnish child language, which are tense (TP), agreement (FinP) and negation (NegP). The purpose of this section is to discuss whether children have all the functional projections from the beginning of language acquisition or whether these projections are developed gradually. In example (1), repeated here as (66), we see the Finnish clause structure tree for an affirmative sentence.

(66)



Recall that the research questions for the functional projections are:

Q8: Which functional projections if any have been acquired at the beginning of language acquisition?

Q9: If children do not have all the functional projections from the beginning of language acquisition, in which order do they develop?

Based on these research questions, the following hypotheses are formed:

H8A: Children have all the same functional projections as adults.

H8B: Children have some but not all functional projections from the beginning of language acquisition.

H8C: Children do not have any functional projections at the beginning of language acquisition.

H9: If children do not have all the functional projections, they develop gradually one at a time.

The research hypotheses will be repeated as the answers to the research questions are considered.

### 6.3.1 TP level

In this section I will present TP-level structures in child Finnish. Table 18 presents different verb forms that the children used in their speech (imperative, present and past tense, conditional, modals, and perfect tense). The affirmative and the negative utterances are given in the same table.

**Table 18.** The verb forms in the data of two Finnish children

MLU	AGE	Imp	Present <sup>56</sup>	Past	Cond	Modal <sup>57</sup>	Perf
1.38	1;10	9	33	9	0	0	0
1.44	1;11	20	78	16	0	0	1
1.75	2;0	13	147	26	0	0	0
1.88	2;1	33	151	24	0	0	0
1.91	2;2	31	158	25	1	0	1
2.21	2;3	21	212	53	5	2	4
2.40	2;4	77	248	42	4	1	6
2.44	2;5	61	210	63	0	2	5
2.59	2;6	38	257	40	11	13	1
2.37	2;7	33	213	28	2	6	1
2.58	2;8	40	143	22	2	3	8
2.92	2;9	80	343	73	9	8	1
2.96	2;10	26	193	30	5	21	5
3.13	2;11	61	327	44	8	22	12
3.17	3;0	72	262	47	5	19	14
SUM		615	2975	542	50	92	59

<sup>56</sup> This column includes all the present tense forms, not only singular ones as in Table 16 and 17.

<sup>57</sup> Recall, that modal verbs are always in the third person singular form in the adult language, so they do not bear agreement.



Table 18 indicates that the children used imperatives and past tense forms from the beginning of the two-word stage in addition to the present tense form. Other verb forms emerged later. Thus, the children did not use all verb forms from the beginning of data collection. The imperatives have already been discussed in conjunction with the Root defaults (see section 6.2)<sup>58</sup> I will now discuss the language of each of the two children in more detail.

**Table 19.** Milla's verb forms

MLU	Age	Imp	Present	Past	Cond	Modal	Perf
1.14	1;8	5	7	6	0	0	0
1.07	1;9	1	8	1	0	0	0
1.58	1;10	2	20	8	0	0	0
1.65	1;11	17	39	11	0	0	1
1.65	2;0	7	61	10	0	0	0
1.98	2;1	8	70	3	0	0	0
1.83	2;2	12	58	5	0	0	1
1.96	2;3	11	91	33	0	0	3
2.17	2;4	26	105	18	0	1	4
2.24	2;5	21	124	35	0	1	5
2.30	2;6	15	141	18	0	0	0
2.01	2;7	7	84	19	0	1	0
2.39	2;8	19	72	16	2	0	5
2.76	2;9	40	186	34	7	4	0
2.84	2;10	11	83	20	3	12	0
3.21	2;11	35	172	28	6	17	2
3.06	3;0	17	151	29	3	8	13
SUM		254	1472	294	21	44	34

Table 19 introduces Milla's verb forms. Affirmative and negative utterances are in the same table. As is presented in Table 19, Milla used imperatives, present and past tense verb forms from the beginning of the data collection. Conditional appeared at

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<sup>58</sup> The syntactic analysis of the Finnish imperative is unclear. While imperatives are seen to be CP-level in some languages, see the late appearance the other CP-level materials, it seems that imperatives are not in CP in Finnish (see next paragraph). Zanuttini (2008) proposes that the imperative might host its own functional projection. If this view is adopted, the children have a functional projection for the imperative from the earliest stage of syntactic development. I will not conclude here which projection the imperative hosts, but there is no obvious reason for placing it to the CP-position in Finnish.

MLU 2.39 (age 2;8) and became more common at MLU 2.76 (age 2;9). Modals emerged at MLU 2.17 (age 2;4), and they were more regularly produced at MLU 2.84 (age 2;10). The perfect tense was quite rare in Milla's speech; she produced two instances before MLU 1.96 (age 2;3).

**Table 20.** Laura's verb forms

MLU	Age	Imp	Present	Past	Cond	Modal	Perf
1.19	1;10	7	13	1	0	0	0
1.23	1;11	3	39	5	0	0	0
1.84	2;0	6	86	16	0	0	0
1.79	2;1	25	81	21	0	0	0
1.99	2;2	19	100	20	1	0	0
2.46	2;3	10	121	20	5	2	1
2.64	2;4	51	143	24	4	0	2
2.63	2;5	40	86	28	0	1	0
2.89	2;6	23	116	22	11	13	1
2.73	2;7	26	129	9	2	5	1
2.77	2;8	21	71	6	0	3	3
3.09	2;9	40	157	39	2	4	1
3.09	2;10	15	110	10	2	9	5
3.06	2;11	26	155	16	2	5	10
3.28	3;0	55	111	18	2	11	1
SUM		367	1518	255	29	48	25

Table 20 presents Laura's verb forms with affirmative and negative verb forms in the same table. Laura also produced imperatives, present and past tense verb forms from the beginning of data collection. The first conditional appeared at MLU 1.99 (age 2;2). Modals emerged one month later, at MLU 2.46 (age 2;3), the same stage as perfect tense.

In addition to an imperative and present tense, the children used past tense forms in their early speech, as we have seen in Table 18. Past tense utterances are provided in example (67).

(67) a. Kaatu.

fall.3SG.PAST

‘(It) fell.’

(Milla 1;8)

- b. Putos                      lehti.  
       fall.3SG.PAST    magazine.NOM  
       ‘The magazine fell.’  
       (Milla 1;10)
- c. Heräs.  
       wake.up.3SG.PAST  
       ‘(It) woke up.’  
       (Laura 1;10)
- d. Sattu  
       hurt.3SG.PAST  
       ‘(It) hurt.’  
       (Laura 1;11)
- e. Se                      juuttu                      tonne.  
       it.NOM        stick.3SG.PAST        there  
       ‘It stuck there.’  
       (Milla 1;11)
- f. Meni                      traktori                      piiloon.  
       go.3SG.PAST        tractor.NOM    into.hiding  
       ‘The tractor hid.’  
       (Milla 2;0)
- g. Nalle        löyty.  
       teddy        find.3SG.PAST  
       ‘The teddy was found.’  
       (Laura 2;0)

As can be seen from the examples in (67), the children used past tense verb forms with subjects (67e-g) and utterances without subjects (67a-d; see section 6.1 for discussion of the children’s null subjects). The children used past tense verb forms in the correct context when the action had already happened. The most common past tense form was third person singular, which is also the Root Default form in early child Finnish (see section 6.2). Only the TP-projection is evidenced; since the data do not

show the presence of agreement (agreement is discussed more next section). Thus, I propose that Finnish children have TP from the beginning of the two-word stage.

The conditionals emerged in the children's speech at MLU 1.91–2.21 (age 2;2–2;3). Recall that, in Finnish, the conditional is formed with the ending *-isi*, and the auxiliary is not needed. At the same age, the children began to use modals. The common modal verb in Finnish is *täytyy* 'must', see section 2.2.1.

For the combined verb forms, the pluperfect was very rare, and it has not been analyzed here. The perfect became more common at MLU 2.21 (age 2;3). Since the perfect tense requires an auxiliary, this can explain why the perfect is acquired later. In Finnish, the children did not use bare participles in their early speech (see Table 15 previous chapter). Thus, the IP-level projections other than TP, emerged about MLU 2.21 (age 2;3). Recall that, in adult Finnish, tense (past and perfect), as well as mood (conditional) and modals, are assumed to occur in TP (see section 2.2). Although other TP-level elements emerge late, I will assume that TP is present from the earliest stage of syntactic development, given the past tense data.<sup>59</sup>

Now we can answer the eighth research question, which is repeated here:

Q8: Which functional projections if any have been acquired at the beginning of language acquisition?

The hypotheses connected to this research question are:

H8A: Children have all the same functional projections as adults.

H8B: Children have some but not all functional projections from the beginning of language acquisition.

H8C: Children do not have any functional projections at the beginning of language acquisition.

The children had past tense verb forms from the beginning of data collection, so they had functional projection for tense at this stage of language acquisition. The first modals emerged in the children's speech at MLU 2.21 (age 2;3) and mood, which is conditional, appeared for the children at MLU 1.91 (age 2;2). In fact, Laura had conditional at MLU 1.99 (age 2;2) and Milla quite late at MLU 2.39 (age 2;8). Laura

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<sup>59</sup> It is possible that auxiliaries and modal verbs (e.g. *täytyy* 'must') belong to projection, which is above T, and I leave this question open here.

had modals at MLU 2.46 (age 2;3) and Milla at MLU 2.17 (age 2;4). Thus, it could be that TP-projection did not have all the same properties as in the adult language, since the children did not use modals or mood in their early language. These features might be acquired later at MLU 1.91–2.21 (age 2;2–2;3). In conclusion, the H8C hypothesis is not supported by the data, since the children needed projection expressing for past tense. The other two hypotheses will be considered in the next sections.

### 6.3.2 Agreement and the finite projection (FinP)

For the purpose of this discussion, FinP is traditionally AgrP and contains agreement. I will use these interchangeably. Table 21 presents the children’s agreement data with affirmative and negative utterances in the same table. The only plural form analyzed is the first person plural/passive verb form. The other plural verb forms were so rare, that they are analyzed together.

**Table 21.** The agreement in the data of two Finnish children<sup>60</sup>

MLU	AGE	1SG	2SG	3SG	Pass/1PL	PL
1.38	1;10	0	0	44	0	0
1.44	1;11	7	1	94	0	0
1.75	2;0	5	0	172	1	0
1.88	2;1	9	0	168	1	0
1.91	2;2	46	1	131	10	0
2.21	2;3	64	0	197	13	0
2.40	2;4	53	4	232	13	1
2.44	2;5	82	4	175	13	0
2.59	2;6	79	20	215	10	1
2.37	2;7	49	4	171	25	0
2.58	2;8	46	2	129	4	0
2.92	2;9	79	16	288	39	5
2.96	2;10	68	8	151	20	3
3.13	2;11	87	20	266	27	9
3.17	3;0	65	15	231	29	4
SUM		739	95	2664	205	23

Table 21 indicates that the children only used the third person singular verb forms early on, as we have already established in terms of the Root Default discussion, see

<sup>60</sup> The table is not the same as with the null subjects because Table 21 includes the contexts omitted in the null subject table.

section 6.2. The numbers in Table 21 suggest that agreement emerged at MLU 1.91 (age 2;2) when the first person singular verb form appeared together with some plural forms in the passive. In this view, first person singulars might be examples of memorized chunks from MLU 1.44 to 1.88 (ages 1;11 to 2;1).<sup>61</sup> This suggests that FinP is acquired at MLU 1.91 (age 2;2). Recall that TP was argued to be acquired from the beginning of data collection.

**Table 22.** Milla's singular affirmative verb forms

MLU	Age	1SG	2SG	3SG present	3SG Past
1.14	1;8	0	0	7	6
1.07	1;9	0	0	8	1
1.58	1;10	0	0	15	4
1.65	1;11	5	1	24	10
1.65	2;0	3	0	44	10
1.98	2;1	5	0	47	3
1.83	2;2	9	0	23	3
1.96	2;3	28	0	42	28
2.17	2;4	33	0	65	14
2.24	2;5	43	3	67	24
2.30	2;6	26	0	96	11
2.01	2;7	11	1	49	15
2.39	2;8	9	0	52	13
2.76	2;9	36	12	102	24
2.84	2;10	19	4	44	13
3.21	2;11	30	15	104	17
3.06	3;0	26	10	83	20
SUM		283	46	872	216

Table 22 presents Milla's affirmative verb forms in singular persons and tense is shown for the third person. Table 22 proposes that the first person verb form was third person singular, and this was used in present and past tenses. The first person verb form emerged at MLU 1.65 (age1;11). At the same stage, Milla had one second person verb

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<sup>61</sup> It might be that at this stage agreement morphology is developing, since the children produced some first person verb forms in their speech. However, it is not clear how productive agreement morphology was at this stage. In addition, some of the forms were incorrect, for example *katsolen* for *katselen* 'I watch', Milla 1;11. The child has merged the correct first person ending *-len* to the stem *katso* and has not changed the vowel.

form. These early forms might be rote learned, and they might not be productive. The first person agreement morphology was more productively used at MLU 1.96 (age 2;3). The second person singular verb forms became more common at MLU 2.76 (age 2;9).

**Table 23.** Laura's singular affirmative verb forms

MLU	Age	1SG	2SG	3SG present	3SG Past
1.19	1;10	0	0	13	1
1.23	1;11	1	0	29	5
1.84	2;0	2	0	71	13
1.79	2;1	4	0	37	20
1.99	2;2	28	1	51	11
2.46	2;3	29	0	76	10
2.64	2;4	11	4	90	21
2.63	2;5	30	1	51	22
2.89	2;6	44	19	63	12
2.73	2;7	29	3	79	3
2.77	2;8	27	2	38	1
3.09	2;9	30	4	89	30
3.09	2;10	39	1	47	7
3.06	2;11	40	1	89	10
3.28	3;0	29	3	68	14
SUM		343	39	891	180

Table 23 shows Laura's singular affirmative verb forms. Table 23 demonstrates that Laura's first verb forms were in the third person singular present and past tenses. Laura had one first person singular verb form at MLU 1.23 (age 1;11), but this might be imitated from previous conversation. The first person singular verb forms became more common at MLU 1.99 (age 2;2).<sup>62</sup> Laura had many second person singular verb forms at MLU 2.89 (age 2;6), so it can be assumed that singular agreement morphology has been acquired at this stage.

If the children have TP-projection from beginning of the data collection, and they have acquired FinP at MLU 1.91 (age 2;2), we would expect both TP and FinP in the

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<sup>62</sup> Laura's mother commented in the taping session at the age of 2;3, that she had also noticed one week before that Laura did not use third person singular verb forms any more when speaking about herself.

same utterance from MLU 1.91 (age 2;2). Example (68) presents utterances where the children have tense and agreement at MLU 1.91 (age of 2;2).

- (68) a. Minä tein tätä.  
I.NOM do.1SG.PAST this.PAR  
'I did this.'  
(Milla 2;2)
- b. Etsin.  
search.1SG.PAST  
'I searched.'  
(Milla 2;2)
- c. Mä piirsin munan.  
I.NOM draw.1SG.PAST egg.ACC  
'I drew the egg.'  
(Laura 2;2:3)
- d. Mä kaaduin.  
I.NOM fall.1SG.PAST  
'I fell.'  
(Laura 2;2:3)
- e. Tiesin.  
know.1SG.PAST  
'I knew.'  
(Laura 2;2:3)

In example (69) two possible counterexamples are given from before MLU 1.91 (age 2;2) that have both TP and FinP. Provided that each child had just one such example, I will continue to assume that FinP emerges at MLU 1.91 (age 2;2) rather than earlier.



(69) a. Laitoin.<sup>63</sup>

put.1SG.PAST

‘I put.’

(Milla 1;11)

b. Tulin sisään.

come.1SG.PAST inside

‘I came inside.’

(Laura 2;0)

Most of the children’s utterances that were in past tense were in the third person singular. Thus, it can be concluded that before MLU 1.91 (age 2;2) the children have tense, but they do not have agreement. Thus, it seems that tense has been acquired at the beginning of the two-word stage, but agreement and the corresponding functional projection, FinP, emerge later at MLU 1.91–2.21 (the age of 2;2–2;3).<sup>64</sup> Tense occurs only in the third person singular in early child Finnish. This confirms with the assumption that third person singular is the Root Default form in child Finnish. It can be assumed that Finnish children have one functional projection from the beginning of syntactic development, as Clahsen (1990) has presented for the German child language.

Now we can consider the H8A and H8B hypotheses, which are connected to the eighth research question as to whether the children have functional projections from the beginning of language acquisition, or not. These hypotheses are:

H8A: Children have all the same functional projections as adults.

H8B: Children have some but not all functional projections from the beginning of language acquisition.

In addition to the third person singular verb form, the children began to use agreement morphology productively for the first person singular at MLU 1.99 (age 2;2) for Laura and MLU 1.96 (age 2;3) for Milla. Thus, the children did not have FinP from

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<sup>63</sup> One-word utterance can be a complete sentence in Finnish.

<sup>64</sup> Even though the children had first person verb forms before the age 2;2–2;3, it is clear that the children did not have FinP from the beginning of syntactic development. It might be that, between 1;11 and 2;1, agreement morphology was developing, and therefore the children had some first person verb forms.

the beginning of syntactic development. Recall from the previous section that the children produced past tense forms from the beginning of data collection. Thus, it can be concluded that they have at least one functional projection for the tense from the beginning of the two-word stage. Since the children do not have FinP from the beginning of syntactic development, the H8A hypothesis is not supported by the data. In addition, the H8B hypothesis is supported by the data, since the children have TP from the beginning of syntactic development, and FinP emerges later.

Now we might be able to give answers to the second and seventh research question from the previous section. These research questions are repeated here:

Q2: Is there a connection between third person agreement and null subjects?

Q7: Is there a connection between the Root Default verb form and agreement?

The hypothesis associated with the second research questions is:

H2: An intermediate stage can be expected when the null subject decreases, and third person singular verb form is analyzed as agreeing. The decrease in null subjects is related to the reanalysis of third person singular agreement as a third person singular affix.

Recall from the previous section that the third person singular verb form is the Root Default form in child Finnish, and, at this stage it does not have agreement morphology. Since the children have FinP in their language at MLU 1.91–2.21 (the age 2;2–2;3), it can be assumed that at this stage at the latest the third person singular form has been reanalyzed as a personal verb form instead of Root Default. The children did produce some first person verb forms when they were supposed to be in the Root Default stage. These verb forms are assumed to be finite, so the Root Default verb forms and finite verb forms overlap slightly in the Root Default stage, as has been found in other languages (e.g. Wexler 1998).<sup>65</sup>

Laura had a clear increase in the first person singular verb forms at MLU 1.91 (age 2;2), suggesting that agreement had been acquired. At the same point, the number of overt first person singular subjects began to increase (with more increase in MLU 2.46

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<sup>65</sup> Wexler (1998) suggests that children have a Unique Checking Constraint (UCC), which allows a D-feature on the subject to only check once and this allows the optionality of Root Infinitives. The other option would be an optimality-theoretic analysis with partial constraint ranking proposed by Davidson and Legendre (2003).

(age 2;3); see Table 7). In addition, at MLU 1.99 (age 2;2) third person singular null subjects begin to be reduced (with more reduction at MLU 2.46 (age 2;3); see Table 7). Thus, it appears that the increase in overt first person singular subjects may be due to the appearance of (first person singular) agreement. Since the third person overt subjects have a similar pattern, it would seem reasonable to assume that the third person verb form is being reanalyzed as an agreement form at MLU 1.99 (age 2;2) as well (rather than being just the Root Default).

Milla data exhibited a clear increase in first person singular verb forms at MLU 1.96 (age 2;3). Milla's overt subjects in first person singular increased at MLU 2.17–2.24 (age 2;4–2;5, see Table 6). Third person singular null subjects also reduced to 5% at MLU 2.17 (age 2;4, see Table 6) — so, Milla had the same pattern as Laura but 1–2 months later. Thus, these findings support the H2 hypothesis that the acquisition of agreement and the null subject pattern are connected. The Root Default verb form and agreement also have a connection. Namely, if the Root Default form is reanalyzed as a third person agreement form, as suggested, then the agreement/null subject pattern holds both in the first and the third person.

### **6.3.3 NegP**

In this section I will present Finnish negation in child language. Recall that negation in Finnish involves the negative auxiliary *E-*, which only hosts agreement; NegP is thus assumed to be located between TP and FinP. Tables 24 and 25 show the children's negative verb forms. One-word negations are excluded from the analysis. Only singular negative forms are analyzed because plurals were so rare (except first person plural/passive). The third person singular negation is divided into present and past tenses usage.

**Table 24.** Milla's singular negation

MLU	Age	1SG	2SG	3SG present	3SG Past
1.14	1;8	0	0	2	0
1.07	1;9	0	0	1	0
1.58	1;10	0	0	6	4
1.65	1;11	1	0	8	0
1.65	2;0	0	0	12	0
1.98	2;1	0	0	18	0
1.83	2;2	1	0	16	0
1.96	2;3	0	0	16	0
2.17	2;4	1	0	9	0
2.24	2;5	6	0	6	1
2.30	2;6	8	0	10	1
2.01	2;7	4	0	8	2
2.39	2;8	5	0	5	2
2.76	2;9	9	0	13	6
2.84	2;10	5	0	5	0
3.21	2;11	5	2	8	1
3.06	3;0	7	2	17	1
SUM		52	4	160	18

Table 24 presents Milla's negation in singular verb forms and present and past tenses for third person. The first negation verb forms were in the third person singular. Since the instances of past tense negation were quite rare, they are difficult to analyze. Second person negation was also rare.<sup>66</sup> First person negation seems to emerge later than agreement in affirmative utterances, at MLU 2.24 (age 2;5). It appeared in the affirmative utterances at MLU 1.96 (age 2;3).

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<sup>66</sup> These both could be the result from the taping session and its context. The children often spoke about what they were doing or what they were playing with their toys. In these kinds of contexts, second person use is rare. Most of the time, children were speaking about their immediate surroundings, and it might be that in these environments past negation is rare.

**Table 25.** Laura's singular negation

MLU	Age	1SG	2SG	3SG present	3SG Past
1.19	1;10	0	0	0	0
1.23	1;11	0	0	10	0
1.84	2;0	0	0	14	3
1.79	2;1	0	0	39	1
1.99	2;2	8	0	16	0
2.46	2;3	7	0	17	2
2.64	2;4	8	0	18	0
2.63	2;5	3	0	3	0
2.89	2;6	1	1	6	0
2.73	2;7	5	0	8	0
2.77	2;8	5	0	7	0
3.09	2;9	4	0	15	3
3.09	2;10	5	3	14	0
3.06	2;11	12	2	11	2
3.28	3;0	3	0	6	1
SUM		61	6	184	12

Table 25 presents Laura's singular negative utterances. Laura did not have negative utterances in her first taping session. After that, she had negation in third person singular. Third person past tenses were rare, as in the case of Milla, so they were difficult to investigate. Laura produced first person negation at the same age as first person affirmative utterances, at MLU 1.99 (age 2;2). Second person negation was rare.

Tables 24 and 25 show that the children's first negative utterances were in the third person singular. The first person singular emerged at MLU 1.91 (age 2;2), which is the same stage when the first person singular agreement became more common (see Table 21, above). In addition, most of the negative utterances were in the present tense, and the past tense negations were rarer. Since Laura did not have negation before MLU 1.23 (age 1;11), her negation might have emerged later than Milla's, who had it from the beginning of data collection.

It is difficult to draw a conclusion as to whether the child have TP and NegP or only TP, since negation and tense only occurred a few times in the same clause. From this it

could be concluded that the children only have TP and not both.<sup>67</sup> The evidence suggests that the children have NegP and TP early on, but it is unclear as to whether they can use them in the same sentence. In Summary, TP is attested from the beginning of data collection. NegP is also attested from the beginning, or shortly after TP. FinP emerged at MLU 1.91 (age 2;2).

Recall the research questions, which are repeated here:

Q8: Which functional projections if any have been acquired at the beginning of language acquisition?

The relevant hypotheses are:

H8A: Children have all the same functional projections as adults.

H8B: Children have some but not all functional projections from the beginning of language acquisition.

H8C: Children do not have any functional projections at the beginning of language acquisition.

The children used negation in the third person singular very early on. Milla produced it as early as the first taping session and Laura in the second. Thus, it could be that Laura only had TP in the beginning of data collection, and NegP emerged shortly after data collection began. Hence, the children had one functional projection for negation very early on. The children produced negation in sentences with past tense very rarely, so it is difficult to say whether they had two functional projections or only one that hosts both negation and tense at the beginning of syntactic development. For Laura, first person singular negation emerged at the same stage 1.99 (age 2;2) as first person singular in her affirmative utterances. For Milla, first person negative utterances became more common at MLU 2.24 (age 2;5), which is two months later than first person agreement morphology in affirmative utterances. The negation data for the Finnish child language does not support the H8A hypothesis, since agreement is missing in the children's early speech. The H8C hypothesis is not supported by the data, since the children have tense, and maybe negation from the beginning of the two-word stage. The H8B hypothesis is supported by the data, since children have TP from the

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<sup>67</sup> The other option could be that the children have one functional projection such that tense and negation compete for this one functional projection, as has been suggested for child French between tense and agreement (Legendre et. al (2002).

beginning of the two-word stage and negation at least shortly after that, but they do not have agreement.

### **6.3.4 Summary of IP level projections**

In this section I have discussed IP-level projections in the Finnish child language. The first functional projection in child Finnish is TP. The children have this form from the beginning of the two-word stage; only past tense, however, is used from the beginning, and the other TP-elements emerge later. The second functional projection is NegP, which the children have from the beginning of the two-word stage, or it could emerge shortly after the TP. The third functional projection in child Finnish is FinP (=AgrP), which emerges at MLU 1.91 (age 2;2). At the same age, the children also use agreement with past tense together in the same clause. Thus, the children have one functional projection from very early on and by MLU 1.91 (age 2;2), they have three functional projections (including NegP).

Now an answer to the ninth research question can be considered. The ninth research question is about the order of acquisition for the functional projections, and it is repeated here:

Q9: If children do not have all the functional projections from the beginning of language acquisition, what order do they develop in?

And the hypothesis relevant to the ninth research question is:

H9: If children do not have all the functional projections, they develop them gradually, one at a time.

The children used past tense from the beginning of the two-word stage. Thus, they can be attested for having functional projection for tense. The children also produced negative utterances very early on, but the first negative utterances were in the third person singular. The NegP might be acquired shortly after the acquisition of TP, since Laura did not have negative utterances in her first taping session. Since the children only used negation in third person singular utterances, the negation might not be productive at the beginning of data collection. These early negative utterances could be negative Root Defaults, since third person singular verb form is the Root Default form in the Finnish child language.

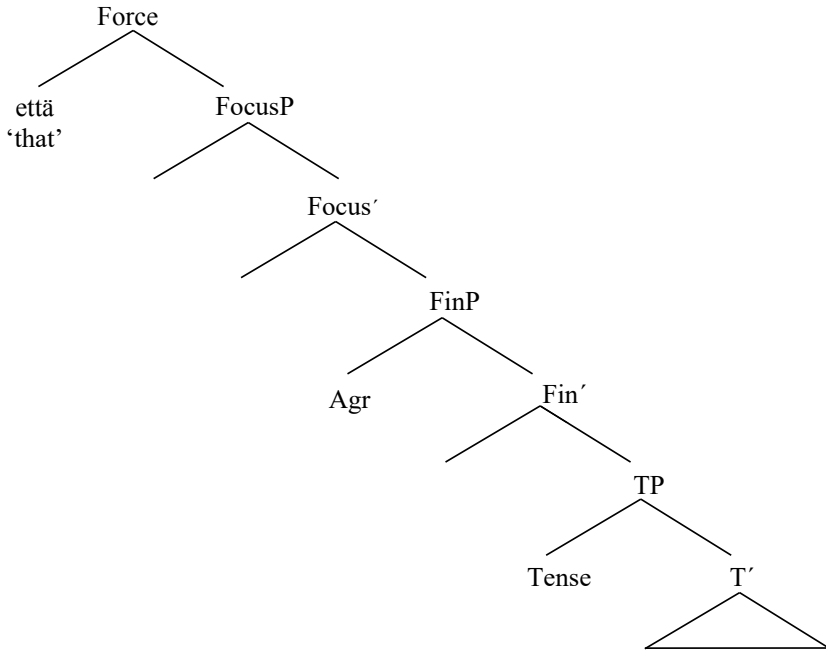
Agreement appeared in the children's speech later than tense or negation, at MLU 1.99 (age 2;2) for Laura and MLU 1.96 (age 2;3) for Milla. Thus, FinP projection emerged later than TP and NegP. This is also supported by the fact that the children began to produce negative utterance with agreement at MLU 1.99 (age 2;2) for Laura and MLU 2.17 (age 2;5) for Milla. Thus, the order of the functional projections is that the TP is present in the beginning of two-word stage, NegP is acquired from the beginning of the two-word stage or appears shortly after the TP, and FinP comes later. This acquisition order of the IP-level functional projections is compatible with order in the adult tree in Finnish (see section 2.2). Thus, the data support the H9 hypothesis that the children do not have all the functional projections from the beginning of two-word stage, and the functional projections develop gradually.

## **6.4 The functional projections of more complex sentences**

In this section, I will present the data from the CP-level projections that are needed for complex clauses such as questions and subordinate clauses. I will describe Milla's and Laura's data in terms of CP-related phenomena.



(70)



Recall that in Finnish the CP-level is divided into ForceP and FocusP, as can be seen from (70). Other CP-level elements than *että* ‘that’ which is in ForceP, are in FocusP. The CP is the same as FocusP.

In the previous section was discussed children’s IP-level phenomena. Recall that the children had TP-projection from very early on and maybe the NegP, but the FinP emerged later. In this section, I will discuss the development of the functional categories of the CP-level in child Finnish. The following research questions are formed with regard to functional projections in child Finnish:

Q8: Which functional projections if any have been acquired at the beginning of language acquisition?

Q9: If children do not have all the functional projections from the beginning of language acquisition, in what order do they develop in?

The following hypothesis are formed based on first research questions:

H8A: Children have all the same functional projections as adults.

H8B: Children have some but not all functional projections from the beginning of language acquisition.

H8C: Children do not have any functional projections at the beginning of language acquisition.

H9: If children do not have all the functional projections, they develop them gradually, one at a time.

In the previous section, it was stated that the H8A and H8C hypotheses are not supported by the data but the H8B hypothesis is. In this section, these research questions are considered at the CP-level.

In Table 26 we are presented with both children's CP-level phenomena, Table 27 has only Milla's, and Table 28 has Laura's CP-level phenomena. I have left out all the one-word utterances from these tables, as they do not reveal much about syntactic development. The columns in these tables are the following: (1) Wh — all wh-questions; (2) Yes/no Q — all yes/no questions; (3) -hAn, -pA — utterances containing a sentential particle (analyzed as occurring in C); (4) että — the complementizer 'that'; (5) Other comp — all other complementizers (*kun* 'when; because'; *mutta* 'but'; *koska* 'since/because'; *jos* 'if'); (6) REL — relative clauses, both free and regular. All of these elements have been postulated to occur in the CP in Finnish, and this list constitutes all the clear CP-related elements that have been discussed in the literature.<sup>68</sup>

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<sup>68</sup> I have excluded constructions that involve just moving an XP, without an overt CP-related morpheme; all the examples that are included in tables 26–28 involve a CP-related morpheme, such as a complementizer.

**Table 26.** CP-phenomenon in the data of two Finnish children

MLU	AGE	Wh <sup>69</sup>	Yes/no Q	-hAn, - pA	että	Other comp	REL <sup>70</sup>
1.38	1;10	1	0	0	0	0	0
1.44	1;11	9	0	0	0	0	0
1.75	2;0	14	0	1	0	0	0
1.88	2;1	20	0	0	0	0	0
1.91	2;2	15	0	0	0	1	2
2.21	2;3	16	5	1	0	1	1
2.40	2;4	15	1	1	0	3	0
2.44	2;5	13	4	9	0	2	0
2.59	2;6	30	5	2	5	12	1
2.37	2;7	11	2	1	1	5	0
2.58	2;8	22	5	0	0	2	2
2.92	2;9	40	20	4	9	16	0
2.96	2;10	14	11	7	2	13	1
3.13	2;11	23	9	4	3	39	0
3.17	3;0	14	12	13	1	35	5
SUM		258	74	43	21	129	12

The combined Table 26 clearly demonstrates that the children had early wh-questions, but, apart from that, the data had only one example of a CP-construction in the four recordings taken between MLU 1.38 and 1.88 (between 1;10 and 2;1 (to be discussed shortly)). Thus, the children did not show other evidence for a CP than these early wh-questions from very early on. The individual Tables 27 and 28 show the pre-CP stage even more clearly. Milla's table begins from MLU 1.58 (age 1;10) when she produced her first wh-question. Before that age, Milla did not have any utterances with CP constructions. Similarly, Laura's table begins from MLU 1.23 (age 1;11) when she made her first wh-questions. Thus, the children did not have wh-questions from the beginning of data collection; they emerged shortly after.

<sup>69</sup> Three of the questions were indirect questions at ages 2;8, 2;10 and 2;11, see Table 29 below.

<sup>70</sup> Most of the relative clauses are free relatives (see examples 75 below)

**Table 27.** Milla's CP-phenomena

MLU	AGE	Wh <sup>71</sup>	Yes/no Q	- <i>hAn</i> , - <i>pA</i>	että	Other comp	REL
1.58	1;10	1	0	0	0	0	0
1.65	1;11	7	0	0	0	0	0
1.65	2;0	3	0	0	0	0	0
1.98	2;1	13	0	0	0	0	0
1.83	2;2	11	0	0	0	0	0
1.96	2;3	12	4	0	0	0	1
2.17	2;4	9	0	1	0	1	0
2.24	2;5	13	4	9	0	2	0
2.30	2;6	23	3	1	1	2	0
2.01	2;7	11	0	1	0	1	0
2.39	2;8	18	3	0	0	0	0
2.76	2;9	39	20	3	3	7	0
2.84	2;10	12	11	6	0	3	0
3.21	2;11	16	9	2	2	30	0
3.06	3;0	14	12	13	1	28	1
SUM		202	66	36	7	74	2

In Milla's data, as shown in Table 27, the pre-CP stage can be argued to last until MLU 1.83 (age 2;2), as CP-level structures did not appear before MLU 1.83 (age 2;2), except for wh-questions, which will be discussed in more detail below. Let us consider Laura's data before discussing the counterexamples.

<sup>71</sup> One of the questions was an indirect question at age 2;11.

**Table 28.** Laura's CP-phenomena

MLU	AGE	Wh <sup>72</sup>	Yes/no Q	- <i>hAn</i> , - <i>pA</i>	että	Other comp	REL <sup>73</sup>
1.23	1;11	2	0	0	0	0	0
1.84	2;0	11	0	1	0	0	0
1.79	2;1	7	0	0	0	0	0
1.99	2;2	4	0	0	0	1	2
2.46	2;3	4	1	1	0	1	0
2.64	2;4	6	1	0	0	2	0
2.63	2;5	0	0	0	0	0	0
2.89	2;6	7	2	1	4	10	1
2.73	2;7	0	2	0	1	4	0
2.77	2;8	4	2	0	0	2	2
3.09	2;9	1	0	1	6	9	0
3.09	2;10	2	0	1	2	10	1
3.06	2;11	7	0	2	1	9	0
3.28	3;0	0	0	0	0	7	4
SUM		56	8	7	14	55	11

In Laura's data in Table 28, we can maintain the pre-CP stage until MLU 1.79 (age 2;1), with one counterexample — apart from the wh-questions. In the fifth recording, MLU 1.99 (age 2;2), Laura produced a complementizer and two relative clauses for the first time, suggesting that CP-projection was emerging.

Based on the tables and disregarding wh-questions for the moment, I propose that Milla's CP is emerging at MLU 1.96 (age 2;3) and Laura's at MLU 1.99 (age 2;2). Recall from the previous section that the children are attested for TP-projection very early on. Hence, they have at least one functional projection from the beginning of the two-word stage. Since the other CP-level elements are missing in the children's speech except formulaic wh-questions, the H8A hypothesis, that the children have all the same functional projections as adults, is not supported by the data. Except for wh-questions, which will be analyzed in more detail below, the only counterexamples to this claim is the one utterance with clitics that will be discussed below. We now turn to a discussion of such clitics in the data, including the one early counterexample.

<sup>72</sup> Two of the questions were indirect questions at age 2;8 and 2;11.

<sup>73</sup> Most of the relative clauses were free relatives (see examples in (75))

### 6.4.1 Clitics

The data had 47 utterances with the clitic *-pA*, and 21 of them were one-word utterances. Utterances with the clitic *-hAn* appeared 17 times, and the data did not contain one-word utterances with the clitic *-hAn*. The first utterances with clitics were one-word utterances for Milla at MLU 1.65 (age 1;11 (example 71a)). In contrast, Laura had a whole clause with her first clitic at MLU 1.84 (age 2;0 (example 71b)). The first clitic used by both of them was *-pA*. Milla's first clause came at MLU 1.27 (age 2;4 (example 71c)).

(71) a. Tulepa!

come-*pA*

'Come along!'

(Milla 1;11)

b. Toinpas koian (koiran) tänne.

bring.1SG.PAST-*pA-s* dog.NOM here

'I brought a dog here.'

(Laura 2;0)

c. Pääsinpäs pois.

got.1SG.PAST-*pA-s* out

'I got out.'

(Milla 2;4)

Thus, the data had only one counterexample of clitics for early CP-level from Laura at MLU 1.84 (age 2;0 (71b)). Milla's early clitics were attested in one-word utterances (71a). Laura may have interpreted her first utterance with a clitic as a whole word, not as a word with clitic (71b).

The first utterance with the clitic *-hAn* was at MLU 2.89 for Laura and MLU 2.30 for Milla (both girls' age was 2;6 (example 72)). Milla's example is ungrammatical because *valkoinenhan* 'white.NOM-*hAn*' should be in the partitive plural.

- (72) a. Valkonenhan noi on.  
 white.NOM-*hAn* those be.3SG  
 ('Those are white.')
- (Milla 2;6)
- b. Onhan tämä auki.  
 be.3SG-*hAn* this.NOM open  
 'This is open.'
- (Laura 2;6)

The children merged the clitic correctly with the word. Most of the time, they also moved the word with the clitic to the front of the clause in accordance with the target grammar. Sometimes other words occurred before the clitic host word, as indicated in the examples of (73). Example (73a) is slightly ungrammatical or odd, since the word with the clitic should be in first position in the clause.<sup>74</sup>

- (73) a. Nyt sainpa sen.  
 now get.1SG.PAST-*pA* it.ACC  
 'Now, I got it.'
- (Laura 2;3)
- b. Noin onpas sinulla vähän parempi.  
 so be.3SG-*pA-s* you.ADE little better  
 'So, (this way) you have little better.'
- (Milla 2;9)

All the utterances with the clitic *-hAn* were whole clauses with the expectation of one (example 74).

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<sup>74</sup> This might be due the fact that the left edge is developing and not yet fully acquired.

- (74) Hups mitähän siellä?  
 oops what.PAR-*hAn* there  
 ‘Oops, what (is) there?’  
 (Milla 3;0)

We now turn to discussion of relative clauses in the data.

#### 6.4.2 Children’s relative clauses

The data only attested to 11 relative clauses. Most of them came from Laura, and only two of them were produced by Milla. The majority of Laura’s relative clauses were free relative clauses, for example (75). These free relative clauses were formed with *wh*-words instead of relative pronouns, which means that some of them might be embedded questions. Since all of them contained the matrix verb *katso* ‘look.IMP’, the free relative meaning might be more plausible.

- (75) a. Kato Taija mitä teen.  
 look.IMP Taija.NOM what.PAR do.1SG  
 ‘Taija look what I’m doing.’  
 (Laura 2;2)
- b. Kato miten se menee.  
 look.IMP how it.NOM go.3SG  
 ‘Look how it goes.’  
 (Laura 2;6)
- c. Hei kato mikä reikä.  
 hi look.IMP what.NOM hole.ACC  
 ‘Hi look what a hole.’  
 (Laura 2;8:3)

The data had nine free relative clauses with the imperative *kat(s)o* ‘look’, of which six of them came with the relative pronoun *miten* ‘how’, two with relative pronoun *mikä* ‘what’ and two with its partitive form *mitä* ‘what.PAR’. All free relative clauses came from Laura, and she did not have any other relative clauses.



Milla had two relative clauses. One was a “true” relative clause (76a), but it was constructed with a *wh*-word instead of a relative pronoun. *Wh*-words are sometimes used in relative clauses with an inanimate reference. The other example was ungrammatical, such that the head noun was missing (76b). In this example, the relative pronoun *joka* ‘who’ was used. Milla did not use free relative clauses. It may be assumed that Milla has not heard these examples from the environment but could have formed them with her own grammar.

- (76) a. Mennään mansikkaretkelle      mistä      voi      poimii  
 go.PASS strawberrytrip.ALL    what.ELA    can.3SG    pick.INF  
 niit      mansikoita  
 they.PAR    strawberry.PL.PAR  
 ‘Let’s go to strawberrytrip where you can pick strawberries.’  
 (Milla 3;0)
- b. Joka      tuoksuu.  
 which    smells  
 M means the soup that smells.  
 (Milla 2;3)

In Lieko’s study, the child began to use relative clauses with *wh*-word *mikä* ‘what’ at the age 2;5. Relative clauses with the relative pronoun *joka* ‘who’ emerged at 2;7. Thus, relative clauses appeared earlier in Lieko’s data than in my data.

### 6.2.3 Complementizers

The data had 129 utterances with complementizers (without *että* ‘that’, which will be discussed shortly). In addition to *että* ‘that’, the children used the complementizers *kun* ‘when, because’, *mutta* ‘but’, *koska* ‘since/because’ and *jos* ‘if’. The most common complementizer was *mutta* ‘but’, and the second most common was *kun* ‘when, because’. Laura began to use complementizers at MLU 1.91 (age 2;2) and Mill at MLU

2.17 (age 2;4). The first complementizer was *kun* ‘when’ (77). Both examples are ungrammatical with a missing main clause.<sup>75</sup>

(77) a. Ku        tippu                    mullakin   kasvi.  
           when   drop.3SG.PAST I.ADE.kin plant.ACC  
           ‘When I drop a plant too.’

(Laura 2;2:3)

b. Ku        aurinko    paistaa    minun   silmiin.  
           when   sun.NOM   shine.3SG I.GEN   eyes.ILL  
           ‘When the sun shines in my eyes.’

(Milla 2;4)

Initially, the children used complementizers at the beginning of utterance even if they were not needed there (77). The children also used complementizers without main clauses when they added or commented something from a previous utterance that someone else had produced (78). These examples are grammatical.

(78) a. Milla 2;5:        tuolla sataa.  
                                   ‘It’s raining over there.’  
           Int:                No niin tekee.  
                                   ‘So, do so.’  
           Milla 2;5:        muttei<sup>76</sup> ukkonen        jyrise.  
                                   but.not   thunder.NOM rumble.3SG.  
                                   ‘But there is no thunder rumbling’

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<sup>75</sup> *Kun*-clauses without main clause are grammatical when answers to questions.

<sup>76</sup> In Finnish, complementizers can combine with negation. In these situations, the negation raises the C position and cliticizes to the complementizer.

- b. Int: Miksei?  
 ‘Why not?’
- Laura 2;10: Koska siihen ei saa laittaa.  
 since it.ILL not.3SG can put.INF  
 ‘Since (you) cannot put it there.’

In example (79) shows the children’s utterances with complementizers and full main clauses.

- (79) a. Tämä on kivaa kun on nokkela.  
 this be.3SG nice.PAR when be.3SG clever.  
 ‘This is nice when you are clever.’  
 (Milla 2;11:3)
- b. Nyt saa Taija tulla ku mä oon  
 now can.3SG Taija.NOM come.INF when I.NOM be.1SG  
 ylhäällä.  
 upstairs  
 ‘Now Taija you can come because I am upstairs.’  
 (Laura 2;8:3)

The first utterances with the complementizer *että* ‘that’ appeared at MLU 2.59 (age 2;6), and the data had 21 utterances with *että* ‘that’. The children used the complementizer *että* ‘that’ in grammatical (80a-d) and ungrammatical (80e-f) utterances with and without the main clause. Recall that *että* ‘that’ involves a higher functional projection than other utterances with complementizers, ForceP, see the tree in example (70). Finnish has more structure in *että*-clauses than with other complementizers, because *että* ‘that’ is the only element to be positioned in Force, whereas other complementizers are in Focus. The Force-projection is higher in the tree than Focus (see section 2.4). The children acquire utterances with the complementizer *että* ‘that’ later than other complementizers, which are lower in the tree.<sup>77</sup>

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<sup>77</sup> Recall that *että* ‘that’ is obligatory in Finnish, unlike in English.

- (80) a. Vielä tarvitaan nää tänne että ne  
 additionally need.PASS these.NOM here that they.NOM  
 pysyy.  
 stay.3SG  
 ‘We need these here too so they will stay.’  
 (Milla 2;6)
- b. Haluan myös et minä voisin tulla.  
 want.1SG also that I.NOM could.1SG come.INF  
 ‘I also want that I could come.’  
 (Laura 2;6)
- c. Mä otan pois ettei se jää, ota  
 I.NOM take.1SG out that.not it.NOM stay take.IMP  
 ‘I’ll take (it) out so it won’t stay, take (it).’  
 (Laura 2;8:0)
- d. Tarviin siihen vielä toisen narun ettei se lähde  
 need.1SG there yet another rope.ACC that.not it.NOM leave.3SG  
 tuuli kuljettamaan sitä.  
 wind.NOM carry.MA that.PAR  
 ‘I need yet another rope for it so that the wind won’t carry it’  
 (Milla 2;11:3)
- e. Että minua pelottaa olla ylhäällä.  
 that I.PAR scare.3SG be.INF upstairs  
 ‘That I’m scared to be upstairs.’  
 (Laura 2;6)
- f. Että sinä laihdut.  
 that you.NOM lose.weight.2SG  
 ‘That you lose weight.’  
 (Milla 2;9)

In Lieko's study, the first complementizer was *kun* 'when' at age 2;3. the complementizer *että* 'that' was productive at 2;8. Other complementizers appeared later in Lieko's study.

#### 6.4.4 Yes/no questions

The children began to produce yes/no questions at MLU 2.21 (age 2;3 (81)). The data contained 74 yes/no questions. 72 of them were affirmative yes/no questions and only two negative yes/no questions. The clitic *-kO* can be merged with verbs, nouns, negation and adverbs.

- (81) a. Meneekö      tää      siihen?  
           go.3SG-*kO*    this.NOM   se.ILL  
           'Does this go there?'  
           (Laura 2;3)
- b. Joko            tämä            parantunut?  
           already-*kO* this.NOM   heal.PTCP  
           'Is this healed already?'  
           (Milla 2;3)
- c. Eikö      nää?  
           not-*kO*   see.3SG?  
           'Doesn't it see?'  
           (Laura 2;8:3)
- d. Junako      sen      rikkoi?  
           train-*kO*    it.ACC   broke.3SG.PAST  
           'Was it the train that broke that?'  
           (Milla 2;11:0)

As can be seen from examples (81), the children were able to merge the clitic *-kO* with verbs (81a), adverbs (81b), negation (81c) and nouns (81d). They also moved the host word to the beginning of the clause. We have seen that CP-level elements other than wh-questions emerge at MLU 1.91–2.21 (age 2;2–2;3 (and clitics shortly

afterwards)), suggesting an appearance of the FocusP-projection, while *että* ‘that’ (ForceP) emerges at MLU 2.59 (age 2;6). CP is the same as FocusP and ForceP has only *että* ‘that’.

In Kangassalo’s research yes/no questions emerged at age 2;0 when the particle *-ko* combined with different verbs. At age 2;6 the particle *-ko* was used productively, and it was combined with different kinds of words.

As can be seen from Table 18, in Finnish the children have tense, so I assume that they have one functional projection for tense from the two-word stage on (before age of two). As Table 26 shows the children are missing many CP-level elements in their early speech. They do not have complementizers, yes/no questions, or relative clauses in their early language. In addition, the data had only one discourse particle before MLU 2.21 (age 2;3). The only CP-element the children have in their early language before MLU 1.91–2.21 (age 2;2–2;3), is wh-questions. From this, it can be assumed that the children do not have CP from the beginning language of acquisition; and it emerges in their speech at MLU 1.91–2.21 (age 2;2–2;3). In addition, the complementizer *että* ‘that’ emerges in the children’s speech at MLU 2.59 (age 2;6). Thus, ForceP appears later in their grammar.

Wh-questions are the only structures that can support the idea that CP appears earlier than at MLU 1.91 (age 2;2). However, most of the early wh-questions are formulaic and may not be productive. Thus, they can be analyzed as not involving CP yet. Wh-questions are considered in the next section. All the other structures involving CP emerged later in the children’s speech, and only a small part of the utterances required CP. Thus, the data does not give strong support for the existence of CP. The data can be analyzed in a way that CP is missing.

#### 6.4.5 Wh-questions

In my data, the children produced 257 questions with wh-words. The data had 120 questions with the wh-word *missä* ‘where’, and this was the most common wh-word in the children’s language. The second most common wh-word was *mikä* ‘what’ and its partitive form *mitä* ‘what.PAR’. The data contained 46 questions with the wh-word *mikä* ‘what’ and 40 with *mitä* ‘what.PAR’. The wh-word *kuka* ‘who’ appeared in 30 utterances, *mistä* ‘where.from’ in 20 utterances and *mihin* ‘where.to’ in 15 utterances.

Other wh-words occurred only a few times in my data. The most common verb in the children's questions was *olla* 'be'. Further, in Kangassalo's (1995) research, the first wh-questions appeared with verb form *on* 'is'.

In Kangassalo's (1995) study, the first wh-questions contained the wh-words *mikä* 'what', *missä* 'where' and *mitä* 'what.PAR' between age 1;7 and 1;11. Between age 2;0 and 2;5 the wh-words *kuka* 'who', *mihin* 'where.to' and *miten* 'how' emerged. Before the age of 3;0, the children began to use the wh-words *miksi* 'why', *mistä* 'where.from' and *minkä* 'what.ACC'.

**Table 29.** Wh-question in the data of two Finnish children

MLU	AGE	Indirect	w/o verb	missä on X	missä X on <sup>78</sup>	mikä/mitä on X	mikä/mitä X on	With other verb forms
1.38	1;10	0	0	0	1	0	0	0
1.44	1;11	0	1	5	1	0	0	2
1.75	2;0	0	8	0	1	0	3	2
1.88	2;1	0	1	1	2	0	6	1
1.91	2;2	0	0	2	1	0	3	2
2.21	2;3	0	1	4	1	0	3	8
2.40	2;4	0	1	6	0	0	1	7
2.44	2;5	0	0	1	0	0	2	8
2.59	2;6	0	5	5	1	1	8	5
2.37	2;7	0	0	2	0	1	3	2
2.58	2;8	1	3	8	1	0	2	6
2.92	2;9	0	2	7	1	1	0	18
2.96	2;10	1	0	4	1	0	0	6
3.13	2;11	1	2	7	2	0	0	6
3.17	3;0	0	2	1	2	1	2	7
SUM		3	26	53	15	4	33	80

Table 29 shows how different wh-questions were divided over the ages. Milla's first questions came at MLU 1.58 (age 1;10) and Laura's at MLU 1.23 (age 1;11, see example (82)). This it was the third taping session for Milla and the second for Laura.

<sup>78</sup> This is the normal word order in adult Finnish.

- (82) a. Missä dino on?  
 where dino.NOM be.3SG  
 ‘Where is the dino?’  
 (Milla 1;10)
- b. Kuka käy?  
 who go.3SG  
 ‘Who goes?’  
 (Laura 1;11)

Common questions for children consisted of *missä on X* ‘where is X’ (example 83a-b). This form is marked in adult Finnish. Recall, that Finnish wh-questions do not have verb raising in C. The data also attested to *missä*-questions without the verb (examples 83c-d), and the children produced these questions until to age three (or until end of data collection). In Finnish, the verb can also be at the end of the question clause under the noun (example 83e-f). These are examples of adult’s wh-question in Finnish without verb raising.

- (83) a. Missä on minun?  
 where be.3SG I.GEN  
 ‘Where is mine?’  
 (Milla 2;2)
- b. Missä on toinen?  
 where be.3SG other  
 ‘Where is the other?’  
 (Laura 2;4)
- c. Oi missä minun moottoripyörä?  
 oh where I.GEN motorcycle.NOM  
 ‘Oh where (is) my motorcycle?’  
 (Milla 2;9)



- d. Missä ovi?  
 where door.NOM  
 ‘Where (is) the door?’  
 (Laura 2;0)
- e. Missä nenä on?  
 where nose.NOM be.3SG  
 ‘Where is the nose?’  
 (Milla 2;1)
- f. Missä toinen on?  
 where other.NOM be.3SG  
 ‘Where is the other one?’  
 (Laura 2;2:3)

I would like to propose that the early *missä*-questions do not involve a CP but rather just an IP-projection, equivalent to the existential construction in Finnish. Thus, these early wh-questions are equivalent to the existential construction in Finnish (84).

- (84) a. Täällä on kokkoli (krokotiili).  
 here be.3SG crocodile.NOM  
 ‘Here is a crocodile.’  
 (Milla 1;11)
- b. tuolla on kissa.  
 there be.3SG cat.NOM  
 ‘There is a cat.’  
 (Laura 1;11)

Recall that adult Finnish does not have verb raising to C in questions. Given this, if a wh-question involves a CP-projection, the predicted order is *missä XP on* ‘where XP is’. Although there are some early wh-questions of this form, many of the early questions have the form *missä on XP* ‘where is XP’ (83) — a word order that is marked in adult Finnish but is the order found in non-questions (84). The explanation for these marked examples would be that the wh-phrase *missä* ‘where’ is located in [Spec,TP],

just like it would be in (84). Once the CP-projection has developed, the target word order is observed. Table 29 presents that the form *missä on X* ‘where is X’ is more common in the early data. The early *missä X on* ‘where X is’ might be learned by rote from previous conversations.

The next most common wh-word was *mikä* ‘what’ and its partitive form *mitä* ‘what.PAR’, as in example (85). Laura used both of these wh-words at MLU 1.84 (age 2;0). Milla had one question with the wh-word *mitä* ‘what.PAR’ at MLU 1.65 (age 1;11) and more at MLU 1.83 (age 2;2). In addition, the wh-word *mikä* ‘what’ emerged at MLU 1.83 (age 2;2) for Milla.

- (85) a. Mitä            toi            on?  
           what.PAR    that.NOM   be.3SG  
           ‘What is that?’  
           (Laura 2;0)
- b. Mitä            teet?  
           what.PAR   do.2SG  
           ‘What are you doing?’  
           (Milla 1;11)
- c. Mikä            toi            on?  
           what.NOM   that.NOM   be.3SG  
           ‘What is that?’  
           (Laura 2;0)
- d. Mikä            tämmönen on?  
           what.NOM   this sort    be.3SG  
           ‘What sort of thing is this?’  
           (Milla 2;2)
- e. Mikä            on            violetti?  
           what.NOM   be.3SG   purple.NOM  
           ‘What is purple?’  
           (Milla 2;6)

As can be seen from the examples in (85) the children had the verb under NP in these early questions with the wh-word *mikä* ‘what’ or *mitä* ‘what.PAR’, and these were common until age of three. The most of these questions also were *mikä/mitä on* ‘what is’. The data also showed few utterances with the wh-word *mikä* or *mitä* without a verb (86), but these were rarer than with the wh-word *missä* ‘where’.

- (86) a. *Mitä tuolla?*  
           what.PAR there  
           ‘What (is) there?’  
           (Laura 2;0)
- b. *mikä possu?*  
           what.NOM pig.NOM  
           ‘Which (is) pig?’  
           (Milla 2;9)

The children had 71 one-word wh-questions. The first one-word question for Milla was at MLU 1.07 (age 1;9) with wh-word *mitä* ‘what.PAR’. For Laura the first one-word questions were *missä* ‘where’, *minne* ‘where’ and *mistä* ‘where.from’ at MLU 1.23 (age 1;11). Milla’s next wh-word was *missä* ‘where’ at MLU 1.23 (age 1;10). At MLU 1.65 (age 2;0) Milla used *miten* ‘how’, and at 1.87 MLU (age 2;0) Laura used *kuka* ‘who’. The most common one-word wh-question was, as with questions in general, the wh-word *missä* ‘where’. The next common were *mitä* ‘what.PAR’ and then *mikä* ‘what’, *mistä* ‘where.from’ and *kuka* ‘who’.

Next, I will discuss wh-questions that had verbs other than *olla* ‘be’. The wh-questions with the verb *olla* ‘be’ can be analyzed as formulaic, but, if the child also produces other verb forms, we can be more certain that these wh-questions are productive. The data contained 80 utterances with this kind of wh-questions. Laura produced the first one at MLU 1.23 (age 1;11) and Milla at MLU 1.65 (age 1;11), as the examples in (87) show. They became more common at MLU 2.21 (age 2;3), at the point when CP-projection was acquired.

- (87) a. Mitä teet?  
 what.PAR do.2SG  
 ‘What are you doing?’  
 (Milla 1;11)
- b. Kuka käy?  
 who go.3SG  
 ‘Who goes?’  
 (Laura 1;11)

The most common wh-word in this kind of question was *kuka* ‘who’, 20 were attested. Laura’s first question of this type came at MLU 1.23 (age 1;11 (87b)), and Milla’s came at MLU 2.24 (age 2;4 (88)).

- (88) Kuka märkäsi (kasteli)?  
 who get.wet.PAST.3SG  
 ‘Who got it wet?’  
 (Milla 2;4)

The next most common was the wh-word *mitä* ‘what.PAR’, with which can be used for asking object questions. The data included 15 wh-questions with the wh-word *mitä* ‘what.PAR’. Possible object questions in my data are presented in the examples of (89). These wh-questions presumably involve CP-projection.

- (89) a. Mitä teit taas?  
 what.PAR do.2SG.PAST again  
 ‘What did you do again?’  
 (Laura 2;2:3)
- b. Mitä lutee (lukee) tääl?  
 what.PAR read.3SG here  
 ‘What does read here?’  
 (Laura 2;4)

- c. Mitä siellä tapahtuu?  
 what.PAR there happen.3SG  
 ‘What is happening there?’  
 (Milla 2;5)
- d. Mitä täältä löytyy?  
 what.PAR here.from be.found.3SG  
 ‘What will we find in here?’  
 (Milla 2;6)

The next question type featured the wh-word *mihin* ‘where.to’, which appeared 9 times in my data. Some examples are shown in (90).

- (90) a. *Mihin tää menee?*  
 where.to this.NOM go.3SG  
 ‘Where does this go?’  
 (Laura 2;3)
- b. *Mihinhän se putos?*  
 where.to-*hAn* it.NOM fall.3SG.PAST  
 ‘Where did it fall?’  
 (Milla 2;7)

The next question type in the data consisted of 7 questions with the wh-words *mistä* ‘where.from’ and *minne* ‘where’, which are presented in (91).

- (91) a. *Mistä alotetaan?*  
 where.from start.PASS  
 ‘Where do we start?’  
 (Milla 2;3)
- b. *Mistä tää tulee?*  
 where.from this.NOM come.3SG  
 ‘Where does this come from?’  
 (Laura 2;6)

- c. Minne vaunu meni?  
 where carriage.NOM go.3SG.PAST  
 ‘Where did the carriage go?’  
 (Milla 2;1)
- d. Ne menee, minne tuo menee?  
 they go.3SG, where that.NOM go.3SG  
 ‘They go, where that one goes?’  
 (Laura 2;3)

Next, the data had 6 questions with the wh-word *miten* ‘how’ and *missä* ‘where’, which are shown in the entries of example (92).

- (92) a. Miten tää menee?  
 how this.NOM go.3SG  
 ‘How does this go?’  
 (Laura 2;3)
- b. Miten tämä nyt aukastaan?  
 how this.NOM now open.PASS  
 ‘How do we open this now?’  
 (Milla 2;9)
- c. Missä se suuttuu?  
 where it.NOM get.3SG angry  
 ‘Where does it get angry?’  
 (Milla 2;6)
- d. Missä nalle on, missä nalle nuttuu (nukkuu)?  
 where teddy.NOM be.3SG, where teddy.NOM sleep.3SG  
 ‘Where is the teddy, where does the teddy sleep?’  
 (Laura 2;8:3)

The other wh-words that appeared in these questions were *mikä* ‘what.NOM’ three times, *minkä* ‘what.GEN’ two times, *miksi* ‘why’ two times and *kenelle* ‘who.to’ one time. These are presented in (93).

- (93) a. Mikä siellä tulee?  
 what.NOM there come.3SG  
 ‘What is coming from there?’  
 (Milla 3;0)
- b. Minkä taas otan?  
 what.GEN again take.1SG  
 ‘Which one do I take again?’  
 (Milla 2;9)
- c. Miksi tämä ei kulje?  
 why this.NOM not.3SG run  
 ‘Why doesn’t this run?’  
 (Milla 2;11:0)
- e. Kenelle nää voisi laittaa kenelle?<sup>79</sup>  
 who.ALL these.NOM could.3SG put.INF who.ALL  
 ‘Who could these be put on?’  
 (Milla 2;9)

The data had three indirect wh-questions with *tiedän/en tiedä* ‘I know/I don’t know’ and these are presented in example (94).

- (94) a. En tiedä mihin laittaa rattaat.  
 not.1SG know where put.INF stroller.NOM  
 ‘I don’t know where to put the stroller.’  
 (Laura 2;8:3)
- b. Minä tiedän missä on toinen tiikeri  
 I.NOM know.1SG where be.3SG other.NOM tiger.NOM  
 ‘I know where the other tiger is.’  
 (Milla 2;11:0)

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<sup>79</sup> These are probably imitated from Milla’s grandmother who used them sometimes when speaking to Milla when trying to get Milla’s focus to some place or thing. They were not systematically produced.

- c. Mä en tiedä mistä saa isoks.  
 I.NOM not.1SG know where.to get.INF big.TRA  
 ‘I don’t know how to get it big.’  
 (Laura 2;11)

Table 29 indicates that many of the early questions are formed with the verb *on* ‘is’. The most common of these wh-questions is *missä on X* ‘where is X’. I propose that these questions involve IP-projection the same structure as *tuolla on X* ‘there is X’. Then these questions do not need movement to the CP in the same way, as example, object questions. The children begin to use other CP-structures at MLU 1.91–2.21 (age 2;2–2;3). So, based on this I assume that the children probably do not have CP-projection from the beginning of language acquisition. The subject wh-questions and *missä on* ‘where is’ wh-questions would not involve CP-projection, while the early *mikä/mitä on* ‘what is’ questions illustrated the first emergence of CP-projection (or they could work as a trigger for CP as proposed by Sakas and Fodor (2002)).

Apart from early wh-questions with the verb form *olla* ‘be’ and subject questions, the data had three utterances (95) that might involve CP-projection. In these examples, the children had CP-structure before MLU 1.91 (age of 2;2). They were wh-questions with some verb form other than *on* ‘is’. (One of the questions is also a little odd (95b)).<sup>80</sup> I will leave the status of these questions open.<sup>81</sup>

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<sup>80</sup> In addition, the data had two subject wh-questions where the wh-word has not moved to CP. The Wh-word *kuka* ‘who’ may have stayed in the subject position [Spec,TP].

- (1) a. Kuka käy?  
 who go.3SG  
 ‘Who goes?’  
 (Laura 1;11)
- b. Kuka latkee (laskee)?  
 who slide.3SG  
 ‘Who is sliding?’  
 (Laura 2;0)

<sup>81</sup> These early wh-questions might work as a trigger for the CP in the same way as in the early *mikä/mitä on* ‘what is’ questions above (Sakas and Fordor (2001)).



- (95) a. Mitä teet?  
 what.PAR do.2SG  
 ‘What are you doing?’  
 (Milla 1;11)
- b. Missä tuolta kuukkaa (kurkkaa)?  
 where there.from peek.3SG  
 ‘Where is (s/he) peeking from?’  
 (Laura 2;0)
- c. Minne vaunu meni?  
 where carriage.NOM go.3SG.PAST  
 ‘Where did the carriage go?’  
 (Milla 2;1)

To summarize the acquisition of Finnish CP, the children began to produce wh-questions soon after the beginning of data collection, but other CP-structures developed gradually. The early wh-questions are simple and formulaic in nature, and they may involve IP-projection. In addition, they are probably not productive at this stage of language acquisition. Apart from three examples in (95), more complicated wh-questions, clearly involving the CP, emerge at MLU 1.91–2.21 (age 2;2–2;3). Most of the CP-structures are developing by about MLU 2.21 (age 2;3). So, they are emerging at the same age and time. *Että*-clauses appear at MLU 2.59 (age 2;6), which supports the postulation that that *että* ‘that’ is higher in the tree in Finnish in ForceP (see section 2.4.2) than other complementizers. When the children begin to produce CP constructions, they use them correctly for the most part. The only divergence from the adult language is that the children use complementizers without a main clause; where only the subordinate clause emerges. Relative clauses come later, and they are missing in my data.

Recall that the research questions and hypotheses for the functional projections are:

Q8: Which functional projections if any have been acquired at the beginning of language acquisition?

Q9: If children do not have all the functional projections from the beginning of language acquisition, which order do they develop them in?

Based on research questions above, the following hypotheses can be formulated:

H8A: Children have all the same functional projections as adults.

H8B: Children have some but not all functional projections from the beginning of language acquisition.

H8C: Children do not have any functional projections at the beginning of language acquisition.

H9: If children do not have all the functional projections, they develop them gradually, one at a time.

The only CP-level element the children began to use soon after the beginning of data collection was that of formulaic wh-questions. Laura used them in the second taping session and Milla in the third. Relative clauses are missing in my data almost completely. More complex wh-questions appeared in the children's speech at MLU 1.91–2.21 (age 2;2–2;3). Complementizers other than *että* 'that' emerged at MLU 1.91 (age 2;2) for Laura and MLU 2.17 (age 2;4) for Milla. The children began to use clitics at MLU 2.21–2.40 (age 2;3–2;4). Yes/no questions appeared at MLU 2.46 (age 2;3) for Laura and MLU 2.17 (age 2;4) for Milla. The complementizer *että* 'that' emerged at MLU 2.89 for Laura and MLU 2.30 for Milla (i.e. 2;6 for both children). Thus, the complementizer *että* 'that' appeared later in the children's speech than other CP-level elements. The data from CP-level does not support the H8A hypothesis. The hypotheses H8B and H8C were explained in the previous section. CP-level data support the H9 hypothesis that the children's functional projections develop gradually, since the complementizer *että* 'that' is acquired later than other CP-level elements.

## 6.5 Summary of the chapter

In this chapter I described the phenomena of Finnish language development. The first approach presented was null subjects in the Finnish child language. In standard Finnish, subjects are obligatory in the third person, but, in spoken Finnish, subjects are also widely used in other persons. The children omitted third person singular subjects. They did not use subjects in the early speech for other persons either. The children began to use third person singular subjects at MLU 1.91–2.21 (age 2;2–2;3), which is the same age when they began to use first person singular agreement morphology. First, the

children have a stage when most of the third person subjects are omitted. In the intermediate stage, subjects are increasing present, and, in the last stage, null subjects are dropped at a level near that of the adult target language. The children had two possible grammars for first and second person subjects. The same pattern is found for the first and second person subjects, but it appears slightly later than in the third person. After MLU 2.58 (age 2;8), the pattern seems to be mixed, and null subjects usage begins to increase again. The non-pro-drop grammar is acquired before then pro-drop grammar. In addition, acquisition of subjects and agreement are interconnected, since null subjects drop after agreement is acquired.

The second described phenomenon is Root Infinitives. In Finnish, the only possible candidate for RIs in the child language is the third person singular verb form. This differs from other languages, since the verb form is finite, and in other languages the verb form is non-finite. The imperative is the other possible candidate, but the children use the imperative verb forms in the correct contexts, and the imperative is not as common as the third person singular verb form. In addition, the use of imperatives is steady during language acquisition. The children also use the third person singular verb form in incorrect context with a first person referent when they are speaking about themselves. Most of the Root Defaults occur without subjects in Finnish. The Root Default can be assumed to be reanalyzed as an agreeing verb form when first person agreement emerges.

The last phenomenon is the development of Finnish functional projections. The children have tense projection from the beginning of language acquisition. Based on this, I have assumed that Finnish children have one functional projection at the beginning of the two-word stage. Negation emerges shortly either after tense, or it is in place from the beginning. Agreement appeared at MLU 1.91–2.21 (age 2;2–2;3) when first person singular agreement emerged in the children's speech. Before that, they mostly used third person singular verb forms. At this stage, Finnish children have three functional projections. The CP-level material other than the complementizer *että* 'that' emerges at MLU 1.91–2.21 (age 2;2–2;3). *Että*-clauses appeared at MLU 2.59 (age 2;6). Relative clauses were missing in my data, expect that Laura had a few free relative clauses. Thus, Finnish children do not have all the same functional projections that adults have. In addition, functional projections emerge gradually, as assumed by Organic Grammar.

## **7 DISCUSSION**

This chapter will provide the discussion of phenomena in Finnish language acquisition. First, I will discuss a combined analysis of null subjects and Root Infinitives with that of functional projections. Second, I will present the development of functional projections at the IP-level that include tense, agreement and negation. Third, I will introduce functional projections at the CP-level that involve *wh*-questions, *yes/no* questions, discourse particles and complementizers. Last, I will suggest issues for further research.

### **7.1 A combined analysis of null subjects and Root Infinitives using functional projection**

In this section, I will discuss null subjects combined with Root Defaults in the Finnish child language. In section 6.2, I have discussed that the third person singular verb form is the Root Default form in the Finnish child language, as Grinstead (1998) proposes for Spanish and Davidson and Legendre (2003) for Catalan, since it is the most frequent verb form the children use in their early language. The third person singular verb form is also used in other contexts, mostly the first person singular. Further, in earlier studies of Finnish language acquisition, the third person singular verb form is the first verb form that emerges in the speech of children before the first person singular (e.g. Toivainen 1980, Laalo 1997; 1998; 1999; 2011). Karlsson (1982:208) also claims that the third person singular verb form is a default form in adult Finnish. In addition, recall from section 6.2 that the children also use the third person singular with tense and negation before they use other persons, which supports the view that the third person singular is the Root Default in child Finnish. Most of the Root Defaults in Finnish child language occur without subjects, which is compatible with findings of child language data from other languages (e.g. Clahsen 1990). The Root Default verb form in the Finnish child language differs from that of other languages since the third person singular verb form is not a non-finite verb form but a finite verb form in the adult language.

As is stated in the previous chapter, third person singular verb form is the only possible option for the Root Default form in child Finnish. Finnish children only use imperatives and third person singular verb forms in their early language. In contrast to the third person singular verb forms, imperatives are produced overwhelmingly in correct contexts, and they are not used in finite contexts. Finnish has several infinitive verb forms, but these forms are not produced in early child Finnish. Thus, they are not suitable candidates for Root Default. The use and occurrence of infinitive verb forms in the adult language, could be the reason why children do not produce infinitives in their early language. In addition, Finnish has several infinitive verb forms that have different distributions in the adult language, and this could influence the use of infinitives in the child language.

I propose that Root Defaults have one functional projection above VP in the Finnish child language. This projection is TP because the past tense verb forms in the children's early speech are in the third person singular. I assume that the Root Default verb forms lack agreement, which is the same as Grinstead (1998) postulates for Spanish and Davidson and Legendre (2003) for Catalan, even though it is the finite form in the adult language. Therefore, children's Root Defaults cannot have FinP since Root Defaults do not have agreement. In addition, Root Defaults do not involve any CP-level functional projections.

Since the Root Default verb form is a finite in adult language, Finnish Root Default cannot include only the VP. Thus, the VP does not have an appropriate verb form that could occur as the Root Default. If the verb form does not show agreement marking, only the stem should be present. In adult Finnish, the verb form in the VP cannot appear alone, since some (agreement) marking is required. They could, however, occur alone if the Finnish Root Default were analyzed as having a null modal, such as proposed by Boser et. al. (1992). In null modal analyses, children omit a modal verb and only use an infinitive verb form in its place. Since Finnish children combine infinitive verb forms with other verbs, and they do not use them alone, this analysis is not possible for Finnish Root Defaults.

In contrast, Ingham (1998) proposes, that in English, children have tense but not agreement in their Root Infinitive stage, which is compatible analysis for Finnish Root Defaults, since they have tense but not agreement. Further, Ledengre et al. (2002) assume that French children also have tense very early on. In contrast, Schütze and

Wexler (1996) assume that children can omit tense or agreement in their Root Infinitive stage. In Finnish, tense can be present in Root Default utterances, but there is no agreement.

Null subjects are connected to Root Defaults, since most of them appear without subjects. Recall that, in Finnish, subjects are obligatory only in the third person. In section 6.1, I have stated that children omit these subjects. Finnish early null subjects in the third person are the same as null subject in Root Infinitive utterances in other languages. I propose that in Finnish these null subjects are PRO and they occur at position [Spec,TP], as Grinstead (1998) suggests for the Spanish and Catalan child languages. The children do not have nominative case for the subject, since they do not have the FinP or the CP, which could assign the nominative case for the subject. The subject can also be dropped, since the FinP and CP absent in the early language.<sup>82</sup>

According to the analyses by Schütze and Wexler (1996), subject omission in child language is only possible when tense is missing or underspecified. Further, they claim that nominative subjects can only occur with agreement, but with tense the subject has default case. In contrast, Finnish children omit subjects when agreement is missing, since FinP assigns the nominative case to the subject, not tense. Wexler (1994) assumes that children cannot distinguish tense in their Root Infinitive stage, thus an infinitive verb form can be used for the description of an on-going event. In Finnish, the first past tense verb forms are in third person singular, and they can occur without subjects. This suggests that tense is not missing in the Finnish Root Defaults.

Children produce null subjects even though the subject is obligatory in the target grammar (e.g. Hyams 1986; Haegeman 1995). In standard and spoken Finnish, subjects cannot be omitted in the third person, but subjects are also widely used in other persons in spoken Finnish. As the data present, Finnish null subjects in third person are acquired in the same way as in the non-pro-drop languages where many subjects are dropped in the first stage, the second stage omission of subjects decrease, but they are still more common than in that of the adult language. In the final stage, the level of overt subjects

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<sup>82</sup> I assume that PRO is an optional element that is not part of the null subject system of the language. When the subject position emerges in the language, the children begin to use subjects. Before that they have PRO.

is near the adult language. The children reach adult level at MLU 1.91–2.21 (age 2;2–2;3).

First and second person subjects are widely used in spoken Finnish, but they can be omitted in standard Finnish. Thus, children have two grammars they should acquire in Finnish. The acquisition pattern of subjects in the first and second person is the same as in the third person until MLU 2.58 (age 2;8) when null subjects increased again. This could be due to the children hearing more standard Finnish than before, e.g., it may come from books being read to them, or it could be that they hear it in television programs. Based on this, I assume that children acquire first non-pro-drop grammar of spoken Finnish; and only after that do they acquire pro-drop grammar of standard Finnish. It is possible that these grammars are not fully acquired until the child learns to read and write. Further, first and second person subjects are acquired slightly later than third person subjects, at MLU 2.59 (age 2;6).

In spoken Finnish, the passive verb form is used in first person plural contexts. In contrast to first and third person singular, the null subjects with passive verb forms are common until the end of data collection. In addition, first person plural subjects emerge later than in first or third person singular. Recall that, in Finnish, the passive verb form is impersonal, so it is likely that the children hear more passive utterances without subjects than third person utterances when the passive verb form is used as an impersonal passive.

The appearance of first person agreement in children's speech is used as a sign of the point at which the agreement paradigm is acquired, since the third person singular verb form is the Root Default, and it cannot be stated when children have acquired third person agreement. First person singular agreement is productively used by the children at MLU 1.91–2.21 (age 2;2–2;3). Thus, based on this, I conclude that they have acquired agreement at this stage. The emergence of agreement means that the children have acquired FinP. When the children have FinP, they can assign the nominative case to the subject, and third person subject pronoun drop should no longer be possible. Furthermore, CP-projection is acquired around MLU 2.21 (age 2;3) even in analyses where the nominative case is assigned by C, the production of null subjects is expecting to decrease to this point. Indeed, null subjects begin to decrease in the third person singular shortly after the acquisition of agreement.

In other languages, a connection has been found between the acquisition of subjects and decrease in the use of Root Infinitives (Hamann and Plunkett 1998). I have assumed that, when children have acquired agreement at MLU 1.91–2.21 (age 2;2–2;3), the Root Default is reanalyzed as a finite verb. Shortly after this stage, the omission of third person subjects is reduced to the adult level. In addition, at this stage overt subjects in the first person singular begin to increase. These findings suggest that the acquisition of agreement and decrease of null subjects are connected as has also been found in other languages. In addition, at MLU 1.91 (age 2;2) third person verb forms decrease, and other personal verb forms increase. This can provide support for the approach that the Root Default form is reanalyzed to a finite verb form when agreement is acquired, and the number of null subjects drops.

Finnish early Root Defaults have TP, which could be an example of the very early parameter setting proposed by Wexler (1998). Finnish children have acquired the tense projection when they begin speaking two-word utterances. The null subject parameter emerges later when agreement is acquired.

## **7.2 Functional projections**

In this section I will present the development of the functional projections in child Finnish. The first I will discuss the emergence of the IP-level functional projection, which are tense, negation and agreement. The second, I will introduce CP-level functional projections in child Finnish. These include wh-questions, yes/no questions, discourse particles, utterances with complementizers and relative clauses.

### **7.2.1 The IP-level functional projections**

In this section, I will discuss the development of IP-level functional projections in child Finnish. Table 30 gives the summary for when the IP-level functional projections are productively used in child Finnish.



**Table 30.** The summary of the development of IP-level functional projections for both children

	Milla		Laura	
	MLU	AGE	MLU	AGE
TP	1.14	1;8	1.19	1;10
NegP	1.14	1;8	1.23	1;11
FinP	1.96	2;3	1.99	2;2

Finnish children use the past tense very early on in their language acquisition. The most frequent and earliest past tense form is the third person singular. The children apply the past tense verb forms in the correct context when the action has already happened. According to Clahsen (1990) and Clahsen, Penke and Parodi (1993), children have one functional projection above VP. They have assumed that in the German child language this projection is for finite verbs. I will follow Clahsen's (1990) proposal and assume that Finnish children have one functional projection above VP at the beginning of language acquisition. In contrast to the German child language, this projection is for tense in the Finnish child language. In Finnish, this projection cannot be for agreement, since Finnish children acquire agreement at MLU 1.91–2.21 (age 2;2–2;3), and tense is present from the beginning of syntactic development.

Further, Guasti (1993) has claimed that Italian children have a functional category containing the verbal inflection. According to her, this projection is present in child grammar from the beginning, since early Italian verbs are always accompanied by agreement morphemes and the choice of these morphemes is not arbitrary. Similarly, Grinstead (2000) has assumed that in Spanish and Catalan children have agreement but not tense or number. In contrast, Ingham (1998) proposes that children use tense in English, but not agreement, as do Legendre et al. (2002) for child French. This analysis is compatible with the Finnish child language, since Finnish children use tense in their early language. Recall that, in the child Finnish, the third person singular verb form is the Root Default form that does not bear agreement marking. Thus, there is no agreement ending in the children's early Finnish.

Even though Finnish children have negation very early on, I assume that Finnish children have only one functional projection in their early language. Since Laura did not have negative utterances in her first taping session NegP may have emerged shortly after tense, or it may have been in place from the beginning of the two-word stage as suggested by Milla's data. Since negation and past tense rarely occur in the same

utterances in the data, it is difficult to draw conclusions on whether the children have had negation and tense in the same sentence very early on. One possibility would be that negation and past tense compete for the same functional projection in children's early Finnish, as tense and agreement do in French (Legendre et al. 2002). Further, early negation appeared in the third person singular, and they can be assumed to be negative Root Defaults.

Agreement is acquired later than tense or negation, at MLU 1.91 (age 2;2), when first person singular verb forms appear in the children's speech. Shortly after this, first person plural agreement is acquired. Even though the children do not use many other plural verb forms than first person plural/passive, they have likely acquired full agreement morphology by the age of three. Thus, after the FinP has emerged at MLU 1.9 (age 2;2), the children have three functional projections, which are for tense, negation and agreement, at this stage.

Recall that, in Finnish, TP also hosts conditional, modals and perfect tense. The children acquire these structures after the past tense, so TP does not have all the same properties it has in adult TP, as is assumed by Schütze and Wexler (1996). The auxiliaries are one element, which is missing from the children's early speech. The emergence of the perfect tense after the past tense could be explained by the fact that it contains an auxiliary. The modals and conditional emerge at the same age as agreement or shortly thereafter. One possibility is that the past tense might work as a trigger for other elements in the tense projection, as presented by Sakas and Fodor (2001) in the Structural Trigger approach. This explains why other structures appear later than tense does.

To summarize the development of the IP-level functional projection, the TP is present from the earliest stage of syntactic development for both girls. Milla also has the NegP from the beginning of the two-word stage, but Laura's NegP is acquired shortly after the TP. When the children begin to use agreement morphology for the first person singular verb forms, in addition to the third person singular, I assume that they have acquired the FinP, which emerges later for both girls, with Laura at MLU 1.91 (age 2;2) and Milla at MLU 1.96 (age 2;3). Clahsen (1990) claims that in German children have a stage when they have a VP that hosts the infinitive verb form, and the children use this form in finite context in their speech. In Finnish, the children do not

have this stage, since they do not use an infinitive verb form in finite contexts, or any other verb form which could be hosted by the VP without any other projections.

## 7.2.2 The CP-level functional projections

In this section I will introduce how CP-level functional projections develop in child Finnish. Table 31 presents the summary for when the CP-level constructions are productively used.

**Table 31.** The summary of the development of CP-level functional projections for both children

	Milla		Laura	
	MLU	AGE	MLU	AGE
Wh-questions	1.58	1;10	1.23	1;11
Yes/no questions	1.96	2;3	2.46	2;3
Clitics	2.17	2;4	1.84	2;0
Relative clauses	1.96	2;3	1.99	2;2
Complementizers other than <i>että</i> ‘that’	2.17	2;4	1.99	2;2
<i>että</i> ‘that’	2.30	2;6	2.89	2;6

The CP-level functional constructions include wh-questions, yes/no questions, discourse particles, complementizers and relative clauses. The complementizer *että* ‘that’ is the only element in Finnish associated with the higher projection ForceP (all of the other CP-level elements occupy FocusP). With the exception of wh-questions, the children do not have any other CP-level structures in their early language.

Early wh-questions are very simple and formulaic in nature. It could be that these early wh-questions are not (fully) productive, since verb forms other than *on* ‘is’ are rarely used. I have assumed that these early wh-questions do not need movement, as is discussed by Vainikka and Young-Scholten (2011). If the early wh-questions do not need movement, a landing position for the wh-word is unnecessary. One way to treat them is to analyze them as memorized chunks, for example, from the structure *tuolla on X* ‘there is X’ can be used to form questions *missä on X* ‘where is X’. This is the stage when the children have simple wh-questions, but no other CP-elements can be called pre-CP stage, which lasted until MLU 1.79 (age 2;1) for Laura and MLU 1.83

(age 2;2) for Milla. After this stage, the other CP-elements begin to emerge in the children's speech.

I also propose that Finnish children's imperatives do not need CP-projection, since the other CP-level materials appear later. One possibility could be that imperatives host their own functional projection, as suggested by Zanuttini (2008). In this case, Finnish children would have functional projection for the imperative from the beginning of the two-word stage.

The children begin use of complementizers other than *että* 'that' at MLU 1.91 (age 2;2). The children also use the complementizers in incomplete sentences with the main clause is missing. The children acquire yes/no questions and discourse particles at approximately MLU 2.21 (age 2;3). Both of these involve a clitic. The children can merge the clitic with a word and then move the merged form to the beginning of the clause in accordance with the adult language. This age is the same as when agreement emerged in the children's grammar.

Relative clauses emerge in the children's speech at the same age as most of the other CP-level constructions. The children mainly use free relative clauses, and the frequency of these is low. Relative clauses with the relative pronoun *joka* 'who' are missing in the data, and the children use the wh-word *mikä* 'what'. Even though relative clauses have less structure than other CP structures, they are acquired later. One reason could be in the data collection situations.

The complementizer *että* 'that' is higher in the tree in Finnish than other CP-level elements. The children use the complementizer *että* at MLU 2.59 (age 2;6). Similar to the other complementizers, it is also used in incomplete sentences as well as with complete ones. The complementizer *että* is higher in the tree, which explains why it is acquired later than other CP-level elements.

It could be proposed that the children have three stages when acquiring wh-questions. The first wh-questions are formulaic, and they do not need to contain movement. The data has three counterexamples where the children have CP-structures before MLU 1.91 (age 2;2). These examples could represent the beginning of CP structure acquisition. Since they emerge earlier than other CP structures, they might be triggers to full CPs, as is suggested by Saikkonen (2015). Thus, these early, more complex wh-questions could be productive and not learned as chunks. After that, when the other CP elements (except *että* 'that') emerge at MLU 1.91–2.40 (age 2;2–2;4), the

children have FocusP. ForceP is acquired upon the acquisition of the complementizer *että* ‘that’. The wh-questions might work as the trigger in the same way as past tense in IP-level.

To summarize the development of CP-level functional projections, the children have wh-questions at nearly the beginning of the two-word stage. They are quite simple, and most of them contain the verb form *on* ‘is’. I have assumed that they do not need movement. Except for wh-questions, and the complementizer *että* ‘that’, all of the CP-level constructions emerge at MLU 1.91–2.40 (age 2;2–2;4) for both girls. In addition, this is the same age when more complex wh-questions emerges. As such, this is the stage when FocusP has been acquired. ForceP is acquired at 2;6, when *että*-clauses appear to the children’s speech.

Overall, the pattern of development of the functional projections is fairly consistent with the idea of incremental Structure Building (from the bottom up) developed in Vainikka and Young-Scholten (2011, 2013). They assume that functional projections develop in the same order as they appear in the adult tree. The order of acquisition for the IP-level projections appears to be first TP, second NegP and third FinP, as expected. Within CP-level projections, the order is first FocusP and then ForceP, as predicted. The only difference is that Finnish children begin with one functional projection TP. Organic Grammar assumes the children begin with only VP. However, the early wh-questions occur earlier than some of the IP-level projections. Nevertheless, since the children do not have wh-questions in their first taping sessions, it may be assumed that CP is not present from the beginning of language acquisition. Early wh-questions can be processed as formulaic and not (fully) productive when they do not need movement, or they can be considered as triggers for full CP.

### **7.3. Issues for future research**

Further research should investigate how to explain the Root Default form in child Finnish, since it is finite. Finnish Root Defaults should also be compared to Root Infinitives in other languages. This thesis does not investigate the semantics of the Finnish Root Default, and the subject is left for further research. In addition, comprehension data on Finnish Root Defaults should be obtained in the future.

Comprehension data could provide more information on how children understand third-person singular verb forms. They could possibly investigate in which contexts or what kind of contexts the Root Default form can be used. In addition, the use and distribution of infinitive verbs should be studied in the adult language, since this could explain why Finnish children do not use infinitives as Root Default forms.

In early child Finnish, null subjects **in the third person** behave in the same way as in other languages where subjects are obligatory. Finnish children have to learn two subject systems. In addition, spoken and standard Finnish differs in how and when subjects are used.. Children hear both of these systems in their early language. One possibility is that Finnish children acquire these different systems when they learn to read and write. Thus, more research is needed on how Finnish children acquire these two subject systems.

Furthermore, the early wh-questions need more clarification. The possible trigger mechanism needs more research for both tense and wh-questions. The comparison data of early wh-questions in other languages should be provided. Finnish children's use of two types of wh-questions (*missä X on* 'where X is' and *missä on X* 'where is X') also need to be studied in more detail with possible comparisons with other languages.

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